

Sequence Listing

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 Baker Kevin P.
 Botstein, David
 Desnoyers, Luc
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 Ferrara, Napoleon
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 Gerber, Hanspeter
 Gerritsen, Mary E.
 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Hillan, Kenneth J
 Kljavin, Ivar J.
 Kuo, Sophia S.
 Napier, Mary A.
 Pan, James;
 Paoni, Nicholas F.
 Roy, Margaret Ann
 Shelton, David L.
 Stewart, Timothy A.
 Tumas, Daniel
 Williams, P. Mickey
 Wood, William I.

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ccgggtgggt gatgacactg aagaaaacct tcgtc 535

<210> 9

<211> 434

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
293, 296, 305, 336, 358, 361

<223> unknown base

<400> 9

tgacggaatc ccgggctggg tctcctggtt tngacaagat aaacccccag 50

caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100

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gttttggaca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200

tggantttgc ctttgcagaa ntttgnngtg ttcctttgcg gattttctcc 250

tttttcccag ttccagtcac agngaggggcg catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350

ttgtcctnat ngccagcctt gtggtcctac cctacctggg ggtgcacggt 400

gcgacctggy gcgtgggttc cctcctggcg ggca 434

<210> 10

<211> 154

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 33, 49, 68, 83, 90, 98, 119

<223> unknown base

<400> 10

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acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100

cgctctcatc gccagcctng tggctctacc ctacctgggg gtgcacggtg 150

agac 154

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<211> 24

<212> DNA

<213> Artificial Sequence

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<400> 11
ctgatccggt tcttggtgcc cctg 24

<210> 12
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<220>
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gctctgtcac tcacgctc 18

<210> 13
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<220>
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<400> 13
tcattctcttc cctctccc 18

<210> 14
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<220>
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<400> 14
ccttccgcca cggagttc 18

<210> 15
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<400> 15
ggcaaagtcc actccgatga tgtc 24

<210> 16
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ccgtgagccg cctcatcttc acgtttcttc tcttcctggg ggtgctggtg 200
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gctgcaggcc tcggatcatc ccctctacac catgtttgtc acctggtcag 900
ccctatccag tatccctgaa cagaaatgca acccccatth gccaaaccag 950

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Leu Asp Ala Thr | Gln Gln Gln Gln Gln | Gln Val Ala Ala Cys Glu | | | |
| | 365 | | 370 | | 375 |
| Gly Arg Ala Phe | Asp Asn Glu Gln Asp | Gly Val Thr Tyr Ser Tyr | | | |
| | 380 | | 385 | | 390 |
| Ser Phe Phe His | Phe Cys Leu Val Leu | Ala Ser Leu His Val Met | | | |
| | 395 | | 400 | | 405 |
| Met Thr Leu Thr | Asn Trp Tyr Lys Pro | Gly Glu Thr Arg Lys Met | | | |
| | 410 | | 415 | | 420 |
| Ile Ser Thr Trp | Thr Ala Val Trp Val | Lys Ile Cys Ala Ser Trp | | | |
| | 425 | | 430 | | 435 |
| Ala Gly Leu Leu | Leu Tyr Leu Trp Thr | Leu Val Ala Pro Leu Leu | | | |
| | 440 | | 445 | | 450 |
| Leu Arg Asn Arg | Asp Phe Ser | | | | |
| | 455 | | | | |

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 <223> Synthetic oligonucleotide probe

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<220>
 <223> Synthetic oligonucleotide probe

<400> 21
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<210> 22
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<220>
 <223> Synthetic oligonucleotide probe

<400> 22
 cttcttccac ttctgcctgg 20

<210> 23
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<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 23
cctgggcaaa aatgcaac 18

<210> 24
<211> 24
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 24
caggaatgta gaaggcaccc acgg 24

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
tggcacagat cttcacccac acgg 24

<210> 26
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
tgtccatcat tatgctgagc ccgggogtgg agagtcagct ctacaagctg 50

<210> 27
<211> 1351
<212> DNA
<213> Homo sapiens

<400> 27
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ttaacctggg tcaaatgcac ggattctcac ctcgtacagt tacgctctcc 100
cgcggcacgt ccgcgaggac ttgaagtccg gagcgctcaa gtttgtccgt 150
aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
tctgtagagc attgtgccta tttccocgag tctttgctgc cgaagctgtg 250

ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100
 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
 ttcgttcatg gctggcgccg aacc 324

<210> 30
 <211> 377
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 262, 330, 371
 <223> unknown base

<400> 30
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 gcggttccc tacgtcccag agccctatta cccggaattt ggatgggacc 200
 gcctccgga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250
 cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctgggt 300
 gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350
 agagccaggc agaaatttat nataacc 377

<210> 31
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<220>
 <223> Synthetic oligonucleotide probe

<400> 31
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<210> 32
 <211> 20
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<220>
 <223> Synthetic oligonucleotide probe

<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 34
gctaatatct gtaagacggc agctacagca ggcatcattg 40

<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens

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tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200
aagaactgcc tgtgcgccct caacctgctt tacaccttgg ttagtctgct 250
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tccgagtggc cggcgtggtc attgcagtgg gcattcttctt gttcctgatt 350
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gaatatgctg gagaggtttt gagatttggt ggtggcattg gcctgttctt 700

Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val
35 40 45

Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala
50 55 60

Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu
65 70 75

Phe Phe Tyr Met Ile Ile Leu Leu Leu Val Phe Ile Val Gln Phe
80 85 90

Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gln Gly
95 100 105

Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn
110 115 120

Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn
125 130 135

Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser
140 145 150

Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val
155 160 165

Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu
170 175 180

Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp
185 190 195

Pro Arg Ala Asn Pro Ser Ala Phe Leu
200

<210> 37
<211> 390
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336
<223> unknown base

<400> 37
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tattctgttaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100
tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150
aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300

gaggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
gacacctgggt gtttggtgta cctacagata caggaaccag 390

<210> 38
<211> 566
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 27
<223> unknown base

<400> 38
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tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgcg 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagtctc agtattgtaa cagcaacttg tcaaacctaa 450
gcataattga atatgatctc ccataatttg aaattgaaat cgtatttgtg 500
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gttgtgcccc acttgc 566

<210> 39
<211> 264
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 84-85, 206
<223> unknown base

<400> 39
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cttgtttagc ccctgaaacc aggagcaaca gggnnacagc tcttgagggt 100
tggttggtgcaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200

tggtctngctg tggttaaaagt gaccactcgt gctcgccatg tgctccaatc 250

ataggagaat atgc 264

<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 40

acccacgtct gcgttgctgc c 21

<210> 41

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 41

gagaatatgc tggagagg 18

<210> 42

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 42

aggaatgcac taggattcgc gcgg 24

<210> 43

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 43

ggccccaag gcaaggacaa agcagctgtc agggaaacctc cgccg 45

<210> 44

<211> 2061

<212> DNA

<213> Homo sapiens

<400> 44

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 atgagaacca aaaaacagct gtcgccaac accgactctg tcgttcctt 2000
 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050
 ttgtagccta a 2061

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 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 45
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 Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe
 20 25 30
 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser
 35 40 45
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe
 50 55 60
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val
 65 70 75
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe
 80 85 90
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp
 95 100 105
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly
 110 115 120
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys
 125 130 135
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro
 140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Pro | Gly | Ile | Pro | Glu | Thr | Ala | Ser | Val | Val | Ala | Ile | Thr | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gln | Glu | Leu | Phe | Pro | Ala | Pro | Ile | Leu | Arg | Ala | Val | Pro | Ser | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Glu | Pro | Gln | Ala | Gly | Ser | Pro | Met | Thr | Leu | Ser | Cys | Gln | Thr | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
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<210> 46
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 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

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 <210> 47
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 <212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 47
tttccagcgc caattctc 18

<210> 48
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<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
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<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

<400> 52

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| Asp | Thr | Tyr | Gly | Arg | Pro | Ile | Leu | Glu | Val | Pro | Glu | Ser | Val | Thr | |
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| Gly | Pro | Trp | Lys | Gly | Asp | Val | Asn | Leu | Pro | Cys | Thr | Tyr | Asp | Pro | |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Leu | Gln | Gly | Tyr | Thr | Gln | Val | Leu | Val | Lys | Trp | Leu | Val | Gln | Arg | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Gly | Ser | Asp | Pro | Val | Thr | Ile | Phe | Leu | Arg | Asp | Ser | Ser | Gly | Asp | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| His | Ile | Gln | Gln | Ala | Lys | Tyr | Gln | Gly | Arg | Leu | His | Val | Ser | His | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Lys | Val | Pro | Gly | Asp | Val | Ser | Leu | Gln | Leu | Ser | Thr | Leu | Glu | Met | |
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| Asp | Asp | Arg | Ser | His | Tyr | Thr | Cys | Glu | Val | Thr | Trp | Gln | Thr | Pro | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Asp | Gly | Asn | Gln | Val | Val | Arg | Asp | Lys | Ile | Thr | Glu | Leu | Arg | Val | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Gln | Lys | Leu | Ser | Val | Ser | Lys | Pro | Thr | Val | Thr | Thr | Gly | Ser | Gly | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Tyr | Gly | Phe | Thr | Val | Pro | Gln | Gly | Met | Arg | Ile | Ser | Leu | Gln | Cys | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Gln | Ala | Arg | Gly | Ser | Pro | Pro | Ile | Ser | Tyr | Ile | Trp | Tyr | Lys | Gln | |
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| | | | | | | | | | | | | | | | |
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| Gln | Thr | Asn | Asn | Gln | Glu | Pro | Ile | Lys | Val | Ala | Thr | Leu | Ser | Thr | |
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| Leu | Leu | Phe | Lys | Pro | Ala | Val | Ile | Ala | Asp | Ser | Gly | Ser | Tyr | Phe | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Thr | Ala | Lys | Gly | Gln | Val | Gly | Ser | Glu | Gln | His | Ser | Asp | Ile | |
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| Val | Lys | Phe | Val | Val | Lys | Asp | Ser | Ser | Lys | Leu | Leu | Lys | Thr | Lys | |
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| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Val | Lys | Gln | Ser | Trp | Asp | Trp | Thr | Thr | Asp | Met | Asp | Gly | Tyr | |
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| Leu | Gly | Glu | Thr | Ser | Ala | Gly | Pro | Gly | Lys | Ser | Leu | Pro | Val | Phe | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Ile | Ile | Leu | Ile | Ile | Ser | Leu | Cys | Cys | Met | Val | Val | Phe | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Met | Ala | Tyr | Ile | Met | Leu | Cys | Arg | Lys | Thr | Ser | Gln | Gln | Glu | His | |
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| Val | Tyr | Glu | Ala | Ala | Arg | | | | | | | | | | |
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<223> Synthetic oligonucleotide probe

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<211> 50

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 35 40 45
 Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
 50 55 60
 Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu
 65 70 75
 Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu
 80 85 90
 Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
 95 100 105
 Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
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 Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
 125 130 135
 Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
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 Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
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 170 175 180

| | | | | | | | | | | | | | | | | | |
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| Pro | Lys | Ser | Arg | Ile | Asp | Tyr | Asn | His | Pro | Gly | Arg | Val | Leu | Leu | 185 | 190 | 195 |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala | 200 | 205 | 210 |
| Gly | Asn | Glu | Ala | Gly | Lys | Glu | Ser | Cys | Val | Val | Arg | Val | Thr | Val | 215 | 220 | 225 |
| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly | 230 | 235 | 240 |
| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu | 245 | 250 | 255 |
| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro | 260 | 265 | 270 |
| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val | 275 | 280 | 285 |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly | 290 | 295 | 300 |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln | 305 | 310 | 315 |
| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr | 320 | 325 | 330 |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro | 335 | 340 | 345 |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro | 350 | 355 | 360 |
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<212> PRT

<213> Homo sapiens

<400> 64

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | |

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| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | |
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| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Asp | Val | Asn | Lys | Thr | Leu | Pro | Asn | Leu | Gln | Val | Val | Asn | His | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Gln | Gly | Pro | His | His | Arg | His | Ile | Leu | Lys | Leu | Leu | Pro | Ser | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Met | Glu | Ala | Thr | Gly | Gly | Glu | Lys | Ser | Ser | Thr | Pro | Ile | Lys | Gly | |

| | | | | | | | | | | | | | | |
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| Pro | Lys | Arg | Gly | His 335 | Pro | Arg | Gln | Asn | Leu 340 | His | Lys | His | Phe | Asp 345 |
| Ile | Asn | Glu | His | Leu 350 | Pro | Trp | Met | Ile | Val 355 | Leu | Phe | Leu | Leu | Leu 360 |
| Val | Leu | Val | Val | Ile 365 | Val | Val | Cys | Ser | Ile 370 | Arg | Lys | Ser | Ser | Arg 375 |
| Thr | Leu | Lys | Lys | Gly 380 | Pro | Arg | Gln | Asp | Pro 385 | Ser | Ala | Ile | Val | Glu 390 |
| Lys | Ala | Gly | Leu | Lys 395 | Lys | Ser | Met | Thr | Pro 400 | Thr | Gln | Asn | Arg | Glu 405 |
| Lys | Trp | Ile | Tyr | Tyr 410 | Cys | Asn | Gly | His | Gly 415 | Ile | Asp | Ile | Leu | Lys 420 |
| Leu | Val | Ala | Ala | Gln 425 | Val | Gly | Ser | Gln | Trp 430 | Lys | Asp | Ile | Tyr | Gln 435 |
| Phe | Leu | Cys | Asn | Ala 440 | Ser | Glu | Arg | Glu | Val 445 | Ala | Ala | Phe | Ser | Asn 450 |
| Gly | Tyr | Thr | Ala | Asp 455 | His | Glu | Arg | Ala | Tyr 460 | Ala | Ala | Leu | Gln | His 465 |
| Trp | Thr | Ile | Arg | Gly 470 | Pro | Glu | Ala | Ser | Leu 475 | Ala | Gln | Leu | Ile | Ser 480 |
| Ala | Leu | Arg | Gln | His 485 | Arg | Arg | Asn | Asp | Val 490 | Val | Glu | Lys | Ile | Arg 495 |
| Gly | Leu | Met | Glu | Asp 500 | Thr | Thr | Gln | Leu | Glu 505 | Thr | Asp | Lys | Leu | Ala 510 |
| Leu | Pro | Met | Ser | Pro 515 | Ser | Pro | Leu | Ser | Pro 520 | Ser | Pro | Ile | Pro | Ser 525 |
| Pro | Asn | Ala | Lys | Leu 530 | Glu | Asn | Ser | Ala | Leu 535 | Leu | Thr | Val | Glu | Pro 540 |
| Ser | Pro | Gln | Asp | Lys 545 | Asn | Lys | Gly | Phe | Phe 550 | Val | Asp | Glu | Ser | Glu 555 |
| Pro | Leu | Leu | Arg | Cys 560 | Asp | Ser | Thr | Ser | Ser 565 | Gly | Ser | Ser | Ala | Leu 570 |
| Ser | Arg | Asn | Gly | Ser 575 | Phe | Ile | Thr | Lys | Glu 580 | Lys | Lys | Asp | Thr | Val 585 |
| Leu | Arg | Gln | Val | Arg 590 | Leu | Asp | Pro | Cys | Asp 595 | Leu | Gln | Pro | Ile | Phe 600 |
| Asp | Asp | Met | Leu | His 605 | Phe | Leu | Asn | Pro | Glu 610 | Glu | Leu | Arg | Val | Ile 615 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| | | | | | | | | | | | | | | |
| Ser | Val | Tyr | Ser | His | Leu | Pro | Asp | Leu | Leu | | | | | |
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<210> 66

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 66

accgcacatc ctcagtctct gtcc 24

<210> 67

<211> 50

<212> DNA

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<223> Synthetic oligonucleotide probe

<400> 67

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<210> 68

<211> 2412

<212> DNA

<213> Homo sapiens

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| | | | | 410 | | | | | 415 | | | | | 420 |
| | | | | | | | | | | | | | | |
| Gly | Ile | Gly | Cys | Ala | Glu | Val | Asn | Lys | Pro | Gly | Val | Tyr | Thr | Arg |
| | | | | 425 | | | | | 430 | | | | | 435 |
| | | | | | | | | | | | | | | |
| Val | Thr | Ser | Phe | Leu | Asp | Trp | Ile | His | Glu | Gln | Met | Glu | Arg | Asp |
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<210> 71
 <211> 24
 <212> DNA
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<220>
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<210> 72
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ser Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp
 50 55 60
 Ser Lys Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu
 65 70 75
 Ser Lys Glu Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile
 80 85 90
 Ala Ser Ser Phe Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp
 95 100 105
 Val Ser Leu Ala Arg Asn Tyr Thr Gly His Cys Tyr Tyr His Gly
 110 115 120
 His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys
 125 130 135
 Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val
 140 145 150
 Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro
 155 160 165
 Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His
 170 175 180
 Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser
 185 190 195
 Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr
 200 205 210

RefSeq: 54402004

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- <212> DNA
- <213> Artificial Sequence
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- <210> 77
- <211> 18
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- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 77
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- <210> 78
- <211> 18
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- <223> Synthetic oligonucleotide probe
- <400> 78
- tacctgcacg atgggcac 18
- <210> 79
- <211> 18
- <212> DNA
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<400> 79
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<210> 80
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<210> 84
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 <212> PRT
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<210> 88
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 35 40 45
 Ala Asp Gly Pro Pro Ala Ala Asp Gly Glu Asp Gly Gln Asp Pro
 50 55 60
 His Ser Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile
 65 70 75
 Gln Ser Ala Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly
 80 85 90
 His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys
 95 100 105
 Tyr Asn Ser Met Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp
 110 115 120
 Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly
 125 130 135
 Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys
 140 145 150
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 170 175 180

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atgttcttcg cgccctggtg 20

<210> 92

<211> 21

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 92

ccaagccaac acactctaca g 21

<210> 93

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 93

aagtggtcgc cttgtgcaac gtgc 24

<210> 94

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 94

ggtcaaaggg gatatatcgc cac 23

<210> 95

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 95

gcatggaaga tgccaaagtc tatgtggcta aagtggactg cacggcca 49

<210> 96

<211> 1016

<212> DNA

<213> Homo sapiens

<400> 96

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aaaccaattt atcctcctgg tactatttct tttgcaaatt cagagtctgg 100

gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150

| | 80 | 85 | 90 |
|-----------------|---------------------|---------------------|-----|
| Thr Gly Pro Ile | Gly Lys Lys Gly Asp | Lys Gly Glu Lys Gly | Leu |
| | 95 | 100 | 105 |
| Leu Gly Ile Pro | Gly Glu Lys Gly Lys | Ala Gly Thr Val Cys | Asp |
| | 110 | 115 | 120 |
| Cys Gly Arg Tyr | Arg Lys Phe Val Gly | Gln Leu Asp Ile Ser | Ile |
| | 125 | 130 | 135 |
| Ala Arg Leu Lys | Thr Ser Met Lys Phe | Val Lys Asn Val Ile | Ala |
| | 140 | 145 | 150 |
| Gly Ile Arg Glu | Thr Glu Glu Lys Phe | Tyr Tyr Ile Val Gln | Glu |
| | 155 | 160 | 165 |
| Glu Lys Asn Tyr | Arg Glu Ser Leu Thr | His Cys Arg Ile Arg | Gly |
| | 170 | 175 | 180 |
| Gly Met Leu Ala | Met Pro Lys Asp Glu | Ala Ala Asn Thr Leu | Ile |
| | 185 | 190 | 195 |
| Ala Asp Tyr Val | Ala Lys Ser Gly Phe | Phe Arg Val Phe Ile | Gly |
| | 200 | 205 | 210 |
| Val Asn Asp Leu | Glu Arg Glu Gly Gln | Tyr Met Ser Thr Asp | Asn |
| | 215 | 220 | 225 |
| Thr Pro Leu Gln | Asn Tyr Ser Asn Trp | Asn Glu Gly Glu Pro | Ser |
| | 230 | 235 | 240 |
| Asp Pro Tyr Gly | His Glu Asp Cys Val | Glu Met Leu Ser Ser | Gly |
| | 245 | 250 | 255 |
| Arg Trp Asn Asp | Thr Glu Cys His Leu | Thr Met Tyr Phe Val | Cys |
| | 260 | 265 | 270 |
| Glu Phe Ile Lys | Lys Lys Lys | | |
| | 275 | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 98

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<210> 99

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 99

gatgatggag gctccatacc tcag 24

<210> 100

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 101

<211> 2574

<212> DNA

<213> Homo sapiens

<400> 101

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gagaagtctc agctagaacg agcggcccta ggttttcgga agggaggatc 200
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 <211> 730
 <212> PRT
 <213> Homo sapiens

<400> 102
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 Gln Leu Glu Arg Ala Ala Leu Gly Phe Arg Lys Gly Gly Ser Gly
 20 25 30
 Met Phe Ala Ser Gly Trp Asn Gln Thr Val Pro Ile Glu Glu Ala
 35 40 45
 Gly Ser Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu
 50 55 60
 Pro Leu Leu Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp
 65 70 75
 Leu Pro Ala Asp Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys
 80 85 90
 Arg Ala Leu Arg Ala Arg Ala Leu Ala Ala Ala Ala Asp Pro
 95 100 105
 Glu Gly Pro Glu Gly Gly Cys Ser Leu Ala Trp Arg Leu Ala Glu
 110 115 120
 Leu Ala Gln Gln Arg Ala Ala His Thr Phe Leu Ile His Gly Ser
 125 130 135
 Arg Arg Phe Ser Tyr Ser Glu Ala Glu Arg Glu Ser Asn Arg Ala
 140 145 150
 Ala Arg Ala Phe Leu Arg Ala Leu Gly Trp Asp Trp Gly Pro Asp
 155 160 165
 Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly Glu Gly Glu Arg Ala
 170 175 180
 Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser Gly Ala Glu Phe
 185 190 195
 Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala Ala Ala Pro
 200 205 210

| | | |
|-----------------|---------------------|-------------------------|
| Val Thr Thr Gly | Glu Pro Ile Arg Asp | Pro Gln Gly His Cys Met |
| 515 | 520 | 525 |
| Ala Thr Ser Pro | Gly Glu Pro Gly Leu | Leu Val Ala Pro Val Ser |
| 530 | 535 | 540 |
| Gln Gln Ser Pro | Phe Leu Gly Tyr Ala | Gly Gly Pro Glu Leu Ala |
| 545 | 550 | 555 |
| Gln Gly Lys Leu | Leu Lys Asp Val Phe | Arg Pro Gly Asp Val Phe |
| 560 | 565 | 570 |
| Phe Asn Thr Gly | Asp Leu Leu Val Cys | Asp Asp Gln Gly Phe Leu |
| 575 | 580 | 585 |
| Arg Phe His Asp | Arg Thr Gly Asp Thr | Phe Arg Trp Lys Gly Glu |
| 590 | 595 | 600 |
| Asn Val Ala Thr | Thr Glu Val Ala Glu | Val Phe Glu Ala Leu Asp |
| 605 | 610 | 615 |
| Phe Leu Gln Glu | Val Asn Val Tyr Gly | Val Thr Val Pro Gly His |
| 620 | 625 | 630 |
| Glu Gly Arg Ala | Gly Met Ala Ala Leu | Val Leu Arg Pro Pro His |
| 635 | 640 | 645 |
| Ala Leu Asp Leu | Met Gln Leu Tyr Thr | His Val Ser Glu Asn Leu |
| 650 | 655 | 660 |
| Pro Pro Tyr Ala | Arg Pro Arg Phe Leu | Arg Leu Gln Glu Ser Leu |
| 665 | 670 | 675 |
| Ala Thr Thr Glu | Thr Phe Lys Gln Gln | Lys Val Arg Met Ala Asn |
| 680 | 685 | 690 |
| Glu Gly Phe Asp | Pro Ser Thr Leu Ser | Asp Pro Leu Tyr Val Leu |
| 695 | 700 | 705 |
| Asp Gln Ala Val | Gly Ala Tyr Leu Pro | Leu Thr Thr Ala Arg Tyr |
| 710 | 715 | 720 |
| Ser Ala Leu Leu | Ala Gly Asn Leu Arg | Ile |
| 725 | 730 | |

<210> 103

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 103

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<210> 104
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 <220>
 <223> Synthetic oligonucleotide probe

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 ggagaatgtg gccacaac 18

 <210> 105
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 105
 gccctggcac agtgactcca tagacg 26

 <210> 106
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 atccacttca gcggacac 18

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 <210> 108
 <211> 2579
 <212> DNA
 <213> Homo sapiens

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 cctccacgca cacacatccc caagaacctc gagctcacac caacagacac 100

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 ccggcgcgcg ctcccacett tgccgcacac tccggcgagc cgagcccgca 200

gcgctccagg attctgcggc tcggaactcg gattgcagct ctgaaccccc 250
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| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 365 | | 370 | | 375 |
| Ala Ala Gly Thr | Ser Leu Asp Arg Leu | Val Thr Asp Ile Lys Glu | | | |
| | 380 | 385 | | 390 | |
| Lys Leu Lys Leu | Ser Lys Lys Val Trp | Ser Ala Leu Pro Tyr Thr | | | |
| | 395 | 400 | | 405 | |
| Ile Cys Lys Asp | Glu Ser Val Thr Ala | Gly Thr Ser Asn Glu Glu | | | |
| | 410 | 415 | | 420 | |
| Glu Cys Trp Asn | Gly His Ser Lys Ala | Arg Tyr Leu Pro Glu Ile | | | |
| | 425 | 430 | | 435 | |
| Met Asn Asp Gly | Leu Thr Asn Gln Ile | Asn Asn Pro Glu Val Asp | | | |
| | 440 | 445 | | 450 | |
| Val Asp Ile Thr | Arg Pro Asp Thr Phe | Ile Arg Gln Gln Ile Met | | | |
| | 455 | 460 | | 465 | |
| Ala Leu Arg Val | Met Thr Asn Lys Leu | Lys Asn Ala Tyr Asn Gly | | | |
| | 470 | 475 | | 480 | |
| Asn Asp Val Asn | Phe Gln Asp Thr Ser | Asp Glu Ser Ser Gly Ser | | | |
| | 485 | 490 | | 495 | |
| Gly Ser Gly Ser | Gly Cys Met Asp Asp | Val Cys Pro Thr Glu Phe | | | |
| | 500 | 505 | | 510 | |
| Glu Phe Val Thr | Thr Glu Ala Pro Ala | Val Asp Pro Asp Arg Arg | | | |
| | 515 | 520 | | 525 | |
| Glu Val Asp Ser | Ser Ala Ala Gln Arg | Gly His Ser Leu Leu Ser | | | |
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| Trp Ser Leu Thr | Cys Ile Val Leu Ala | Leu Gln Arg Leu Cys Arg | | | |
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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 111

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<210> 113

<211> 4649

<212> DNA

<213> Homo sapiens

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cgccaactac gcaaagacca agcgggctcc gcgcggaccg gccgcggggc 150
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| aagaaggggc | cttactagct | caagctggag | agaaactaga | gcccagcaca | 1100 |
| acttcacct | cccagcccca | tctcattttc | atcctagcgg | atgatcaggg | 1150 |
| atntagagat | gtgggttacc | acggatctga | gattaaaaca | cctactcttg | 1200 |
| acaagctcgc | tgccgaagga | gttaaactgg | agaactacta | tgtccagcct | 1250 |
| at ttgcacac | catccaggag | tcagtttatt | actggaaagt | atcagataca | 1300 |
| caccggactt | caacattcta | tcataagacc | tacccaaccc | aactgtttac | 1350 |
| ctctggacaa | tgccacccta | cctcagaaac | tgaaggaggt | tg gatattca | 1400 |
| acgcatatgg | tcggaaaatg | gcacttgggt | tttaacagaa | aagaatgcat | 1450 |
| gccaccaga | agaggatttg | ataccttttt | tggttccctt | ttgggaagtg | 1500 |
| gggattacta | tacacactac | aaatgtgaca | gtcctgggat | gtgtggctat | 1550 |
| gacttgatat | aaaacgacaa | tgctgcctgg | gactatgaca | atggcatata | 1600 |
| ctccacacag | atgtacactc | agagagtaca | gcaaatctta | gcttcccata | 1650 |
| accccacaaa | gcctatatatt | ttatatactg | cctatcaagc | tg ttcattca | 1700 |
| ccactgcaag | ctcctggcag | gtatttcgaa | cactaccgat | ccattatcaa | 1750 |
| cataaacagg | agaagatatg | ctgccatgct | ttcctgctta | gatgaagcaa | 1800 |
| tcaacaacgt | gacattggct | ctaaagactt | atggttttcta | taacaacagc | 1850 |
| attatcattt | actcttcaga | taatggtggc | cagcctacgg | caggagggag | 1900 |
| taactggcct | ctcagaggta | gcaaaggaac | atattgggaa | ggagggatcc | 1950 |
| gggctgtagg | ctttgtgcat | agcccacttc | tgaaaaacaa | gggaacagtg | 2000 |
| tgtaaggaac | ttgtgcacat | cactgactgg | taccccactc | tcattttcact | 2050 |
| ggctgaagga | cagattgatg | aggacattca | actagatggc | tatgatatct | 2100 |
| gggagaccat | aagtgagggt | cttcgctcac | cccagtaga | tat ttttgc | 2150 |
| aacattgacc | cctatacacc | aaggcaaaaa | atggctcctg | ggcagcaggc | 2200 |
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| tcaactggca | aaagtgtatg | gcttttcaac | atcacagccg | acccatatga | 2400 |
| gagggtggac | ctatctaaca | ggtatccagg | aatcgtgaag | aagctcctac | 2450 |

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 ttatttcttg cataccatta gaagaatttt atttcatttc ttcaaattat 3400
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 110 | | | | | 115 | | | | | 120 |
| Ile | Cys | Thr | Pro | Ser | Arg | Ser | Gln | Phe | Ile | Thr | Gly | Lys | Tyr | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ile | His | Thr | Gly | Leu | Gln | His | Ser | Ile | Ile | Arg | Pro | Thr | Gln | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Cys | Leu | Pro | Leu | Asp | Asn | Ala | Thr | Leu | Pro | Gln | Lys | Leu | Lys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Val | Gly | Tyr | Ser | Thr | His | Met | Val | Gly | Lys | Trp | His | Leu | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Asn | Arg | Lys | Glu | Cys | Met | Pro | Thr | Arg | Arg | Gly | Phe | Asp | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Phe | Gly | Ser | Leu | Leu | Gly | Ser | Gly | Asp | Tyr | Tyr | Thr | His | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Cys | Asp | Ser | Pro | Gly | Met | Cys | Gly | Tyr | Asp | Leu | Tyr | Glu | Asn | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Asn | Ala | Ala | Trp | Asp | Tyr | Asp | Asn | Gly | Ile | Tyr | Ser | Thr | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Met | Tyr | Thr | Gln | Arg | Val | Gln | Gln | Ile | Leu | Ala | Ser | His | Asn | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Lys | Pro | Ile | Phe | Leu | Tyr | Thr | Ala | Tyr | Gln | Ala | Val | His | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Pro | Leu | Gln | Ala | Pro | Gly | Arg | Tyr | Phe | Glu | His | Tyr | Arg | Ser | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Asn | Ile | Asn | Arg | Arg | Arg | Tyr | Ala | Ala | Met | Leu | Ser | Cys | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Glu | Ala | Ile | Asn | Asn | Val | Thr | Leu | Ala | Leu | Lys | Thr | Tyr | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Tyr | Asn | Asn | Ser | Ile | Ile | Ile | Tyr | Ser | Ser | Asp | Asn | Gly | Gly | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gln | Pro | Thr | Ala | Gly | Gly | Ser | Asn | Trp | Pro | Leu | Arg | Gly | Ser | Lys | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gly | Thr | Tyr | Trp | Glu | Gly | Gly | Ile | Arg | Ala | Val | Gly | Phe | Val | His | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Ser | Pro | Leu | Leu | Lys | Asn | Lys | Gly | Thr | Val | Cys | Lys | Glu | Leu | Val | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| His | Ile | Thr | Asp | Trp | Tyr | Pro | Thr | Leu | Ile | Ser | Leu | Ala | Glu | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Ile | Asp | Glu | Asp | Ile | Gln | Leu | Asp | Gly | Tyr | Asp | Ile | Trp | Glu | |
| | | | | 395 | | | | | 400 | | | | | 405 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Ser | Glu | Gly | Leu | Arg | Ser | Pro | Arg | Val | Asp | Ile | Leu | His |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Asn | Ile | Asp | Pro | Tyr | Thr | Pro | Arg | Gln | Lys | Met | Ala | Pro | Gly | Gln |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | |
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<223> Synthetic oligonucleotide probe

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<222> 33

<223> unknown base

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cgg 53

<210> 118
<211> 2260
<212> DNA
<213> Homo sapiens

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gggctcagga ggaggaagga ggaccctgctc gagaatgcct ctgccctgga 150
gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttccgggaac 200
gcggccagtg caaggcatca cgggttggtta gcatcggcac gtcagcctgg 250
ggtctgtcac tatggaacta aactggcctg ctgctacggc tggagaagaa 300
acagcaaggg agtctgtgaa gctacatgct aacctggatg taagtttggt 350
gagtgcgtgg gaccaaaca atgcagatgc tttccaggat acaccgggaa 400
aacctgcagt caagatgtga atgagtggtg aatgaaaccc cggccatgcc 450
aacacagatg tgtgaataca cacggaagct acaagtgtt ttgcctcagt 500
ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
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aagatgtgtg aacacatttg gaagctacta ctgcaaattg cacattgggt 750
tcgaactgca atatatcagt ggacgatatg actgtataga tataaatgaa 800
tgtactatgg atagccatac gtgcagccac catgccaatt gttcaatac 850
ccaaggggtc ttcaagtgtg aatgcaagca gggatataaa ggcaatggac 900
ttcgggtgtc tgctatccct gaaaattctg tgaagggaagt cctcagagca 950
cctggtacca tcaaagacag aatcaagaag ttgcttgctc acaaaaacag 1000
catgaaaaag aaggcaaaaa ttaaaaatgt taccacagaa cccaccagga 1050

| | | | | | |
|-------------|------------|------------|-------------|-------------|------|
| ctctaccccc | taaggtgaac | ttgcagccct | tcaactatga | agagatagtt | 1100 |
| tccagaggcg | ggaactctca | tggaggtaaa | aaagggaaatg | aagagaaatg | 1150 |
| aaagaggggc | ttgaggatga | gaaaagagaa | gagaaagccc | tgaagaatga | 1200 |
| catagaggag | cgaagcctgc | gaggagatgt | gtttttccct | aaggtgaatg | 1250 |
| aagcaggtga | attcggcctg | attctggtcc | aaaggaaaagc | gctaacttcc | 1300 |
| aaactggaac | ataaagattt | aaatatctcg | gttgactgca | gcttcaatca | 1350 |
| tgggatctgt | gactggaaac | aggatagaga | agatgatttt | gactggaatc | 1400 |
| ctgctgatcg | agataatgct | attggcttct | atatggcagt | tccggccttg | 1450 |
| gcaggtcaca | agaaagacat | tggccgattg | aaacttctcc | tacctgacct | 1500 |
| gcaaccccaa | agcaacttct | gtttgctctt | tgattaccgg | ctggccggag | 1550 |
| acaaagtcgg | gaaacttcga | gtgtttgtga | aaaacagtaa | caatgccctg | 1600 |
| gcatgggaga | agaccacgag | tgaggatgaa | aagtggaaga | cagggaaaaat | 1650 |
| tcagttgtat | caaggaactg | atgctaccaa | aagcatcatt | tttgaagcag | 1700 |
| aacgtggcaa | gggcaaaacc | ggcgaaatcg | cagtggatgg | cgtcttgctt | 1750 |
| gtttcaggct | tatgtccaga | tagcctttta | tctgtggatg | actgaatgtt | 1800 |
| actatcttta | tatttgactt | tgtatgtcag | ttccctgggt | tttttgatat | 1850 |
| tgcatcatag | gacctctggc | attttagaat | tactagctga | aaaattgtaa | 1900 |
| tgtaccaaca | gaaatattat | tgtaagatgc | ctttcttgta | taagatatgc | 1950 |
| caatatTTTgc | tttaaatatc | atatcactgt | atcttctcag | tcatttctga | 2000 |
| atctttccnc | attatattat | aaaatntgga | aangtcagtt | tatctccctt | 2050 |
| cctcngtata | tctgatttgt | atangtangt | tgatgngctt | ctctctacaa | 2100 |
| catttctaga | aaatagaaaa | aaaagcacag | agaaatgttt | aactgtttga | 2150 |
| ctcttatgat | acttcttgga | aactatgaca | tcaaagatag | acttttgcct | 2200 |
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<211> 338

<212> PRT

<213> Homo sapiens

<400> 119

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305

310

315

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320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys
335

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<220>

<223> Synthetic oligonucleotide probe

<400> 120

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<210> 122

<211> 50

<212> DNA

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<223> Synthetic oligonucleotide probe

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<212> DNA

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ggcogagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150

tgtgggtgac tggagcctcg agtgggaattg gtgaggagct ggcttaccag 200

ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcata 250

gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Thr | Lys | His | Asp | | | | | | | | | | | | | | | | |

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<223> Synthetic oligonucleotide probe

<400> 126

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<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

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<212> DNA

<213> Homo sapiens

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 <211> 571
 <212> PRT
 <213> Homo sapiens

<400> 132
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 20 25 30
 Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe
 35 40 45
 Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn
 50 55 60
 Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln
 65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Ala | His | Ile | Cys | Ser | Gly | Ser | Leu | Val | Ala | Asp | Thr | Trp | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Thr | Ala | Ala | His | Cys | Phe | Glu | Lys | Ala | Ala | Ala | Thr | Glu | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Ser | Trp | Ser | Val | Val | Leu | Gly | Ser | Leu | Gln | Arg | Glu | Gly | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Pro | Gly | Ala | Glu | Glu | Val | Gly | Val | Ala | Ala | Leu | Gln | Leu | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Ala | Tyr | Asn | His | Tyr | Ser | Gln | Gly | Ser | Asp | Leu | Ala | Leu | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Leu | Ala | His | Pro | Thr | Thr | His | Thr | Pro | Leu | Cys | Leu | Pro | Gln | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Ala | His | Arg | Phe | Pro | Phe | Gly | Ala | Ser | Cys | Trp | Ala | Thr | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Trp | Asp | Gln | Asp | Thr | Ser | Asp | Ala | Pro | Gly | Thr | Leu | Arg | Asn | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Leu | Arg | Leu | Ile | Ser | Arg | Pro | Thr | Cys | Asn | Cys | Ile | Tyr | Asn | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Leu | His | Gln | Arg | His | Leu | Ser | Asn | Pro | Ala | Arg | Pro | Gly | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Cys | Gly | Gly | Pro | Gln | Pro | Gly | Val | Gln | Gly | Pro | Cys | Gln | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Ser | Gly | Gly | Pro | Val | Leu | Cys | Leu | Glu | Pro | Asp | Gly | His | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Gln | Ala | Gly | Ile | Ile | Ser | Phe | Ala | Ser | Ser | Cys | Ala | Gln | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asp | Ala | Pro | Val | Leu | Leu | Thr | Asn | Thr | Ala | Ala | His | Ser | Ser | Trp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Leu | Gln | Ala | Arg | Val | Gln | Gly | Ala | Ala | Phe | Leu | Ala | Gln | Ser | Pro | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Thr | Pro | Glu | Met | Ser | Asp | Glu | Asp | Ser | Cys | Val | Ala | Cys | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 365 | | 370 | | 375 |
| Thr Arg Pro Glu | Glu Trp Gly Leu Lys | Gln Leu Ile Leu His | Gly | | |
| | 380 | 385 | 390 | | |
| Ala Tyr Thr His | Pro Glu Gly Gly Tyr | Asp Met Ala Leu Leu Leu | | | |
| | 395 | 400 | 405 | | |
| Leu Ala Gln Pro | Val Thr Leu Gly Ala | Ser Leu Arg Pro Leu Cys | | | |
| | 410 | 415 | 420 | | |
| Leu Pro Tyr Pro | Asp His His Leu Pro | Asp Gly Glu Arg Gly Trp | | | |
| | 425 | 430 | 435 | | |
| Val Leu Gly Arg | Ala Arg Pro Gly Ala | Gly Ile Ser Ser Leu Gln | | | |
| | 440 | 445 | 450 | | |
| Thr Val Pro Val | Thr Leu Leu Gly Pro | Arg Ala Cys Ser Arg Leu | | | |
| | 455 | 460 | 465 | | |
| His Ala Ala Pro | Gly Gly Asp Gly Ser | Pro Ile Leu Pro Gly Met | | | |
| | 470 | 475 | 480 | | |
| Val Cys Thr Ser | Ala Val Gly Glu Leu | Pro Ser Cys Glu Gly Leu | | | |
| | 485 | 490 | 495 | | |
| Ser Gly Ala Pro | Leu Val His Glu Val | Arg Gly Thr Trp Phe Leu | | | |
| | 500 | 505 | 510 | | |
| Ala Gly Leu His | Ser Phe Gly Asp Ala | Cys Gln Gly Pro Ala Arg | | | |
| | 515 | 520 | 525 | | |
| Pro Ala Val Phe | Thr Ala Leu Pro Ala | Tyr Glu Asp Trp Val Ser | | | |
| | 530 | 535 | 540 | | |
| Ser Leu Asp Trp | Gln Val Tyr Phe Ala | Glu Glu Pro Glu Pro Glu | | | |
| | 545 | 550 | 555 | | |
| Ala Glu Pro Gly | Ser Cys Leu Ala Asn | Ile Ser Gln Pro Thr Ser | | | |
| | 560 | 565 | 570 | | |

Cys

<210> 133

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 133

cctgtgctgt gcctcgagcc tgac 24

<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gttagcaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

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 attttgggga aaataaatgt ctttgtaaaa aaaaaaaaaa aaaaaaaaa 1998

<210> 137

<211> 316

<212> PRT

<213> Homo sapiens

<220>

<221> unsure

<222> 233

<223> unknown amino acid

<400> 137

Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly

Pro Leu Lys His Ser Asp Ser Lys Glu Asp Asp Gly Gln Glu Ile
 305 310 315

Ala

<210> 138
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 138
 ctggcacagc tcaacctcat ctgg 24

<210> 139
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 139
 gctgtctgtc tgtctcattg 20

<210> 140
 <211> 20
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 140
 ggacacagta tactgaccac 20

<210> 141
 <211> 24
 <212> DNA
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<220>
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<400> 141
 tgcgaaccag gcagctgtaa gtgc 24

<210> 142
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 142
tggaagaaga ggggtggtgat gtgg 24

<210> 143

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 143

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<210> 144

<211> 2336

<212> DNA

<213> Homo sapiens

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<221> unsure

<222> 1620, 1673

<223> unknown base

<400> 144

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tacgttctta aatctatgaa gtcgaggac ctttcgctgc ttttgtaggg 150

acttctttcc ttgcttcagc aacatgaggc ttttcttggtg gaacgcgggtc 200

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gcagctacta ttgaataaat acctatcctg gatttt 2336

<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

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Ser Leu Ile Gly Ala Leu Ile Pro Glu Pro Glu Val Lys Ile Glu
20 25 30

Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly
35 40 45

Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly
50 55 60

Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile
65 70 75

Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln
80 85 90

Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile
95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro
110 115 120

Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg
125 130 135

Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn
140 145 150

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys
155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His
170 175 180

Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys
185 190 195

Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu
200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 146
ctttccttgc ttcagcaaca tgaggc 26

<210> 147
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 147
gccagagca ggaggaatga tgagc 25

<210> 148
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 148
gtggaacgcg gtcttgactc tgttcgtcac ttctttgatt ggggctttg 49

<210> 149
<211> 2196
<212> DNA
<213> Homo sapiens

<400> 149
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<210> 150
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 150
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 20 25 30
 Glu Val Thr Val Pro Ala Thr Leu Asn Val Leu Asn Gly Ser Asp
 35 40 45
 Ala Arg Leu Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His
 50 55 60
 Lys Gln Phe Ser Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys
 65 70 75
 Ser Glu Glu Met Phe Leu Gln Phe Arg Met Lys Ile Ile Asn Leu
 80 85 90
 Lys Leu Glu Arg Phe Gln Asp Arg Val Glu Phe Ser Gly Asn Pro
 95 100 105
 Ser Lys Tyr Asp Val Ser Val Met Leu Arg Asn Val Gln Pro Glu
 110 115 120
 Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg
 125 130 135
 His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu
 140 145 150
 Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser
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 Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val
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 Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp
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 200 205 210
 Asp Asp Gly Ala Lys
 215

<210> 151


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<210> 153
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 153
acggagcatg gaggtccaca gtac 24

<210> 154
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 154
gcacgtttct cagcatcacc gac 23

<210> 155
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 155
cgcctgccct gcaccttcaa ctctgtctac acagtgaacc acaaacagtt 50

<210> 156
<211> 2680
<212> DNA
<213> Homo sapiens

<400> 156
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<210> 157

<211> 412

<212> PRT

<213> Artificial

<400> 157

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                20             25             30
Ala Leu Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly
                35             40             45
Asp Leu Gly Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val
                50             55             60
Val His Tyr Leu Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile
                65             70             75
Trp Leu Asn Leu Glu Leu Leu Leu Pro Val Ile Ile Asp Cys Trp
                80             85             90
Ile Asp Asn Ile Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr
                95             100            105
Gln Phe Pro Asp Gly Val Asp Val Arg Val Pro Gly Phe Gly Lys

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Lys Arg Val Leu Leu Gly Pro
410

<210> 158

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 158

ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

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<211> 45

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<213> Artificial Sequence

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<210> 161

<211> 1512

<212> DNA

<213> Homo sapiens

<400> 161

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cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400

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<213> Homo sapiens

<400> 162

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
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| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | | 1 | 5 | 10 | 15 |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | | 20 | 25 | 30 | |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | | 35 | 40 | 45 | |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | | 50 | 55 | 60 | |
| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | | 65 | 70 | 75 | |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | | 80 | 85 | 90 | |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu | | 95 | 100 | 105 | |
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | | 110 | 115 | 120 | |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | | 125 | 130 | 135 | |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | | 140 | 145 | 150 | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | | 155 | 160 | 165 | |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | | 170 | 175 | 180 | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | | 185 | 190 | 195 | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | | 200 | 205 | 210 | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | | 215 | 220 | 225 | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | | 230 | 235 | 240 | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | | 245 | 250 | 255 | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | | 260 | 265 | 270 | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | | 275 | 280 | 285 | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 290 | | 295 | | 300 |
| Val Val Trp Lys | Lys Gly Leu His Ser | Tyr Tyr Asp Pro Phe | Val | | |
| | 305 | 310 | 315 | | |
| Leu Ser Val Gln | Pro Val Val Phe Gln | Ala Cys Glu Val Asn | Leu | | |
| | 320 | 325 | 330 | | |
| Thr Leu Asp Asn | Arg Leu Asp Ser Gln | Gly Val Leu Ser Thr | Pro | | |
| | 335 | 340 | 345 | | |
| Tyr Phe Pro Ser | Tyr Tyr Ser Pro Gln | Thr His Cys Ser Trp | His | | |
| | 350 | 355 | 360 | | |
| Leu Thr Val Pro | Ser Leu Asp Tyr Gly | Leu Ala Leu Trp Phe | Asp | | |
| | 365 | 370 | 375 | | |
| Ala Tyr Ala Leu | Arg Arg Gln Lys Tyr | Asp Leu Pro Cys Thr | Gln | | |
| | 380 | 385 | 390 | | |
| Gly Gln Trp Thr | Ile Gln Asn Arg Arg | Leu Cys Gly Leu Arg | Ile | | |
| | 395 | 400 | 405 | | |
| Leu Gln Pro Tyr | Ala Glu Arg Ile Pro | Val Val Ala Thr Ala | Gly | | |
| | 410 | 415 | 420 | | |
| Ile Thr Ile Asn | Phe Thr Ser Gln Ile | Ser Leu Thr Gly Pro | Gly | | |
| | 425 | 430 | 435 | | |
| Val Arg Val His | Tyr Gly Leu Tyr Asn | Gln Ser Asp Pro Cys | Pro | | |
| | 440 | 445 | 450 | | |
| Gly Glu Phe Leu | Cys Ser Val Asn Gly | Leu Cys Val Pro Ala | Cys | | |
| | 455 | 460 | 465 | | |
| Asp Gly Val Lys | Asp Cys Pro Asn Gly | Leu Asp Glu Arg Asn | Cys | | |
| | 470 | 475 | 480 | | |
| Val Cys Arg Ala | Thr Phe Gln Cys Lys | Glu Asp Ser Thr Cys | Ile | | |
| | 485 | 490 | 495 | | |
| Ser Leu Pro Lys | Val Cys Asp Gly Gln | Pro Asp Cys Leu Asn | Gly | | |
| | 500 | 505 | 510 | | |
| Ser Asp Glu Glu | Gln Cys Gln Glu Gly | Val Pro Cys Gly Thr | Phe | | |
| | 515 | 520 | 525 | | |
| Thr Phe Gln Cys | Glu Asp Arg Ser Cys | Val Lys Lys Pro Asn | Pro | | |
| | 530 | 535 | 540 | | |
| Gln Cys Asp Gly | Arg Pro Asp Cys Arg | Asp Gly Ser Asp Glu | Glu | | |
| | 545 | 550 | 555 | | |
| His Cys Asp Cys | Gly Leu Gln Gly Pro | Ser Ser Arg Ile Val | Gly | | |
| | 560 | 565 | 570 | | |
| Gly Ala Val Ser | Ser Glu Gly Glu Trp | Pro Trp Gln Ala Ser | Leu | | |
| | 575 | 580 | 585 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Val | Arg | Gly | Arg | His | Ile | Cys | Gly | Gly | Ala | Leu | Ile | Ala | Asp | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Arg | Trp | Val | Ile | Thr | Ala | Ala | His | Cys | Phe | Gln | Glu | Asp | Ser | Met | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Ala | Ser | Thr | Val | Leu | Trp | Thr | Val | Phe | Leu | Gly | Lys | Val | Trp | Gln | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Asn | Ser | Arg | Trp | Pro | Gly | Glu | Val | Ser | Phe | Lys | Val | Ser | Arg | Leu | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Leu | Leu | His | Pro | Tyr | His | Glu | Glu | Asp | Ser | His | Asp | Tyr | Asp | Val | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ala | Leu | Leu | Gln | Leu | Asp | His | Pro | Val | Val | Arg | Ser | Ala | Ala | Val | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Arg | Pro | Val | Cys | Leu | Pro | Ala | Arg | Ser | His | Phe | Phe | Glu | Pro | Gly | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | His | Cys | Trp | Ile | Thr | Gly | Trp | Gly | Ala | Leu | Arg | Glu | Gly | Gly | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Pro | Ile | Ser | Asn | Ala | Leu | Gln | Lys | Val | Asp | Val | Gln | Leu | Ile | Pro | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Gln | Asp | Leu | Cys | Ser | Glu | Ala | Tyr | Arg | Tyr | Gln | Val | Thr | Pro | Arg | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Met | Leu | Cys | Ala | Gly | Tyr | Arg | Lys | Gly | Lys | Lys | Asp | Ala | Cys | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Lys | Ala | Leu | Ser | Gly | Arg | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Trp | Phe | Leu | Ala | Gly | Leu | Val | Ser | Trp | Gly | Leu | Gly | Cys | Gly | Arg | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Pro | Asn | Tyr | Phe | Gly | Val | Tyr | Thr | Arg | Ile | Thr | Gly | Val | Ile | Ser | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Trp | Ile | Gln | Gln | Val | Val | Thr | | | | | | | | | |
| | | | | 800 | | | | | | | | | | | |

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<223> Synthetic oligonucleotide probe

<400> 171

taacagctgc ccactgcttc cagg 24

<210> 172

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 <400> 172
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 <210> 173
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<210> 178

<211> 354

<212> PRT

<213> Homo sapiens

<400> 178

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35 40 45

Lys Pro Ser Val Arg Phe Asn Leu Arg Thr Ser Lys Asp Pro Glu
50 55 60

His Glu Gly Cys Tyr Leu Ser Val Gly His Ser Gln Pro Leu Glu
65 70 75

Asp Cys Ser Phe Asn Met Thr Ala Lys Thr Phe Phe Ile Ile His
80 85 90

Gly Trp Thr Met Ser Gly Ile Phe Glu Asn Trp Leu His Lys Leu
95 100 105

Val Ser Ala Leu His Thr Arg Glu Lys Asp Ala Asn Val Val Val
110 115 120

Val Asp Trp Leu Pro Leu Ala His Gln Leu Tyr Thr Asp Ala Val
125 130 135

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Asn Asn Thr Arg Val Val Gly His Ser Ile Ala Arg Met Leu Asp
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Trp Leu Gln Glu Lys Asp Asp Phe Ser Leu Gly Asn Val His Leu
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Ile Gly Tyr Ser Leu Gly Ala His Val Ala Gly Tyr Ala Gly Asn
170 175 180

Phe Val Lys Gly Thr Val Gly Arg Ile Thr Gly Leu Asp Pro Ala
185 190 195

Gly Pro Met Phe Glu Gly Ala Asp Ile His Lys Arg Leu Ser Pro
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Asp Asp Ala Asp Phe Val Asp Val Leu His Thr Tyr Thr Arg Ser
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230 235 240

<211> 3240
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<213> Homo sapiens

<400> 182

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| | | | | | |
|-------------------------------------|-------------------------|--|-----|--|-----|
| | 170 | | 175 | | 180 |
| Gly Leu Thr Pro Arg Pro Val Pro Ser | Leu Pro Cys Asn Val Thr | | | | |
| 185 | 190 | | | | 195 |
| Leu Glu Asp Phe Tyr Gly Val Phe Ser | Ser Pro Gly Tyr Thr His | | | | |
| 200 | 205 | | | | 210 |
| Leu Ala Ser Val Ser His Pro Gln Ser | Cys His Trp Leu Leu Asp | | | | |
| 215 | 220 | | | | 225 |
| Pro His Asp Gly Arg Arg Leu Ala Val | Arg Phe Thr Ala Leu Asp | | | | |
| 230 | 235 | | | | 240 |
| Leu Gly Phe Gly Asp Ala Val His Val | Tyr Asp Gly Pro Gly Pro | | | | |
| 245 | 250 | | | | 255 |
| Pro Glu Ser Ser Arg Leu Leu Arg Ser | Leu Thr His Phe Ser Asn | | | | |
| 260 | 265 | | | | 270 |
| Gly Lys Ala Val Thr Val Glu Thr Leu | Ser Gly Gln Ala Val Val | | | | |
| 275 | 280 | | | | 285 |
| Ser Tyr His Thr Val Ala Trp Ser Asn | Gly Arg Gly Phe Asn Ala | | | | |
| 290 | 295 | | | | 300 |
| Thr Tyr His Val Arg Gly Tyr Cys Leu | Pro Trp Asp Arg Pro Cys | | | | |
| 305 | 310 | | | | 315 |
| Gly Leu Gly Ser Gly Leu Gly Ala Gly | Glu Gly Leu Gly Glu Arg | | | | |
| 320 | 325 | | | | 330 |
| Cys Tyr Ser Glu Ala Gln Arg Cys Asp | Gly Ser Trp Asp Cys Ala | | | | |
| 335 | 340 | | | | 345 |
| Asp Gly Thr Asp Glu Glu Asp Cys Pro | Gly Cys Pro Pro Gly His | | | | |
| 350 | 355 | | | | 360 |
| Phe Pro Cys Gly Ala Ala Gly Thr Ser | Gly Ala Thr Ala Cys Tyr | | | | |
| 365 | 370 | | | | 375 |
| Leu Pro Ala Asp Arg Cys Asn Tyr Gln | Thr Phe Cys Ala Asp Gly | | | | |
| 380 | 385 | | | | 390 |
| Ala Asp Glu Arg Arg Cys Arg His Cys | Gln Pro Gly Asn Phe Arg | | | | |
| 395 | 400 | | | | 405 |
| Cys Arg Asp Glu Lys Cys Val Tyr Glu | Thr Trp Val Cys Asp Gly | | | | |
| 410 | 415 | | | | 420 |
| Gln Pro Asp Cys Ala Asp Gly Ser Asp | Glu Trp Asp Cys Ser Tyr | | | | |
| 425 | 430 | | | | 435 |
| Val Leu Pro Arg Lys Val Ile Thr Ala | Ala Val Ile Gly Ser Leu | | | | |
| 440 | 445 | | | | 450 |
| Val Cys Gly Leu Leu Leu Val Ile Ala | Leu Gly Cys Thr Cys Lys | | | | |
| 455 | 460 | | | | 465 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Ala | Ile | Arg | Thr | Gln | Glu | Tyr | Ser | Ile | Phe | Ala | Pro | Leu |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ser | Arg | Met | Glu | Ala | Glu | Ile | Val | Gln | Gln | Gln | Ala | Pro | Pro | Ser |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Tyr | Gly | Gln | Leu | Ile | Ala | Gln | Gly | Ala | Ile | Pro | Pro | Val | Glu | Asp |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Phe | Pro | Thr | Glu | Asn | Pro | Asn | Asp | Asn | Ser | Val | Leu | Gly | Asn | Leu |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Arg | Ser | Leu | Leu | Gln | Ile | Leu | Arg | Gln | Asp | Met | Thr | Pro | Gly | Gly |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Gly | Pro | Gly | Ala | Arg | Arg | Arg | Gln | Arg | Gly | Arg | Leu | Met | Arg | Arg |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Val | Arg | Arg | Leu | Arg | Arg | Trp | Gly | Leu | Leu | Pro | Arg | Thr | Asn |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Thr | Pro | Ala | Arg | Ala | Ser | Glu | Ala | Arg | Ser | Gln | Val | Thr | Pro | Ser |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Ala | Ala | Pro | Leu | Glu | Ala | Leu | Asp | Gly | Gly | Thr | Gly | Pro | Ala | Arg |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Glu | Gly | Gly | Ala | Val | Gly | Gly | Gln | Asp | Gly | Glu | Gln | Ala | Pro | Pro |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Leu | Pro | Ile | Lys | Ala | Pro | Leu | Pro | Ser | Ala | Ser | Thr | Ser | Pro | Ala |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Pro | Thr | Thr | Val | Pro | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Ser | Leu | Pro |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Leu | Glu | Pro | Ser | Leu | Leu | Ser | Gly | Val | Val | Gln | Ala | Leu | Arg | Gly |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Arg | Leu | Leu | Pro | Ser | Leu | Gly | Pro | Pro | Gly | Pro | Thr | Arg | Ser | Pro |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Pro | Gly | Pro | His | Thr | Ala | Val | Leu | Ala | Leu | Glu | Asp | Glu | Asp | Asp |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Val | Leu | Leu | Val | Pro | Leu | Ala | Glu | Pro | Gly | Val | Trp | Val | Ala | Glu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ala | Glu | Asp | Glu | Pro | Leu | Leu | Thr | | | | | | | |
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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<220>
<223> Synthetic oligonucleotide probe

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gcaaggtcat tacagctg 18

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<212> DNA
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<223> Synthetic oligonucleotide probe

<400> 186
agaacatagg agcagtccca ctc 23

<210> 187
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<210> 188
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<212> DNA
<213> Artificial Sequence

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<211> 663
<212> DNA
<213> Homo sapiens

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gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100
gaaagtgctg ctgctgggtc tgcagacgag atggataacg tgcagccgaa 150

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 gcccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300
 atttttcata cttttatattg tactcagact tgatcgatta atgaagtgg 350
 tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400
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 cagaaaaagc ctgtgcatga aaaaaaagaa gttttgtaat tttatattac 600
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 aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Ser | Gly | Pro | Tyr | Gln | Lys | Lys | Pro | Val | His | Glu | Lys | Lys | Glu |
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Val Leu

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<212> DNA
<213> Homo sapiens

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<223> unknown base

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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
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<210> 193
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 194
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<212> DNA
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<220>
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<210> 195
<211> 1879
<212> DNA
<213> Homo sapien

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 aaataattaa aaaaaaaact tcattctaa 1879

<210> 196
 <211> 518
 <212> PRT
 <213> Homo sapien

<400> 196
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 20 25 30
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 35 40 45
 Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu
 50 55 60
 Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala
 65 70 75
 Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg
 80 85 90
 Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu
 95 100 105

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 395 | | 400 | | 405 |
| Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr Val Ile Phe Asp | | | | | |
| | 410 | | 415 | | 420 |
| Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro Cys Ala Glu | | | | | |
| | 425 | | 430 | | 435 |
| Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe Ser Thr | | | | | |
| | 440 | | 445 | | 450 |
| Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser Glu | | | | | |
| | 455 | | 460 | | 465 |
| Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly | | | | | |
| | 470 | | 475 | | 480 |
| Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Leu Pro Phe Arg | | | | | |
| | 485 | | 490 | | 495 |
| Cys Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser | | | | | |
| | 500 | | 505 | | 510 |
| Ser Leu Val Arg His Arg Trp Lys | | | | | |
| | 515 | | | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 198
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<220>
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<210> 199
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<220>
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<210> 200
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<220>
 <223> Synthetic oligonucleotide probe

<400> 200
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<210> 201
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 201
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<210> 202
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 202
 gacaagacta cctccgttgg tc 22

<210> 203
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 203
 tgatgcacag ttcagcacct gttg 24

<210> 204
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 204
 cgctccaag gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205
 <211> 1939
 <212> DNA

<213> Homo sapiens

<400> 205

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gggcgggagc cgggagggcg ggccggcatg gaggcgctgc tgctgggcgc 150
ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200
ccccgcctg cggcggcatg ggcaacctgc ggggccgcac ggccgtggtc 250
acgggcgcca acagcggcat cggaaagatg acggcgctgg agctggcgcg 300
ccggggagcg cgcgtggtgc tggcctgccg cagccaggag cgcggggagg 350
cggctgcctt cgacctccgc caggagagtg ggaacaatga ggtcatcttc 400
atggccttgg acttggccag tctggcctcg gtgcgggcct ttgccactgc 450
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aaccatatcg gtccctttct gctgacacat ctgctgctgc cttgcctgaa 600
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 cagggcaggg cagctggtat cgaggtgccc catgggagta aggggacgcc 1850
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 taaagcgcgt tgaccgcca aaaaaaaaaa aaaaaaaaaa 1939

<210> 206
 <211> 377
 <212> PRT
 <213> Homo sapiens

<400> 206
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 Met Gly Asn Leu Arg Gly Arg Thr Ala Val Val Thr Gly Ala Asn
 35 40 45
 Ser Gly Ile Gly Lys Met Thr Ala Leu Glu Leu Ala Arg Arg Gly
 50 55 60
 Ala Arg Val Val Leu Ala Cys Arg Ser Gln Glu Arg Gly Glu Ala
 65 70 75
 Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile
 80 85 90
 Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe
 95 100 105
 Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile
 110 115 120
 His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe
 125 130 135
 Asn Leu Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr
 140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Lys | Met | Thr | His | Arg | Ile | Gln | Ala | Lys | Val | Glu | Pro | Glu | Ile | Gln | |
| | | | | 365 | | | | | 370 | | | | | 375 | |

Leu Ser

<210> 207

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 207

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agactgcccc gggaggccag ggagctccgt gggcagagga gctgctggcc 900
ggctggcaga ggcagagct tggaggcctc cactggggcc aagactacga 950
gttcaaagtg agaccatcct ctggccgggc tcgaggccct gacagcaacg 1000
tgctgctcct gaggtgccc gaaaaagtgc ccagtgcccc acctcaggaa 1050
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accagctgg aaatcgccac ccatatgcca ggctcctact gcgtgcaagt 1250
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tatgagaccg taggtcaaaa gcaccatcct cgtactgttg tcaactatgag 3650

cttaagaaat ttgataccat aaaatggtaa aaaaaaaaaa aaaaaaaaaa 3700

aaaaaaaaaa aaaaaa 3716

<210> 211

<211> 985

<212> PRT

<213> Homo sapiens

<400> 211

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Gly | Met | Ala | Gln | Asp | Ser | Pro | Pro | Gln | Ile | Leu | Val | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Gln | Asp | Gln | Leu | Phe | Gln | Gly | Pro | Gly | Pro | Ala | Arg | Met | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Gln | Ala | Ser | Gly | Gln | Pro | Pro | Pro | Thr | Ile | Arg | Trp | Leu | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Gly | Gln | Pro | Leu | Ser | Met | Val | Pro | Pro | Asp | Pro | His | His | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Pro | Asp | Gly | Thr | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Ala | Arg | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| His | Ala | His | Asp | Gly | Gln | Ala | Leu | Ser | Thr | Asp | Leu | Gly | Val | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Cys | Glu | Ala | Ser | Asn | Arg | Leu | Gly | Thr | Ala | Val | Ser | Arg | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Arg | Leu | Ser | Val | Ala | Val | Leu | Arg | Glu | Asp | Phe | Gln | Ile | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Pro | Arg | Asp | Met | Val | Ala | Val | Val | Gly | Glu | Gln | Phe | Thr | Leu | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Cys | Gly | Pro | Pro | Trp | Gly | His | Pro | Glu | Pro | Thr | Val | Ser | Trp | Trp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Asp | Gly | Lys | Pro | Leu | Ala | Leu | Gln | Pro | Gly | Arg | His | Thr | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Gly | Gly | Ser | Leu | Leu | Met | Ala | Arg | Ala | Glu | Lys | Ser | Asp | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Thr | Tyr | Met | Cys | Val | Ala | Thr | Asn | Ser | Ala | Gly | His | Arg | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Arg | Ala | Ala | Arg | Val | Ser | Ile | Gln | Glu | Pro | Gln | Asp | Tyr | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Pro | Val | Glu | Leu | Leu | Ala | Val | Arg | Ile | Gln | Leu | Glu | Asn | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Leu | Leu | Asn | Pro | Asp | Pro | Ala | Glu | Gly | Pro | Lys | Pro | Arg | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | |
|---|-----|-----|-----|
| Ala Val Trp Leu Ser Trp Lys Val Ser Gly Pro Ala Ala Pro Ala | 245 | 250 | 255 |
| Gln Ser Tyr Thr Ala Leu Phe Arg Thr Gln Thr Ala Pro Gly Gly | 260 | 265 | 270 |
| Gln Gly Ala Pro Trp Ala Glu Glu Leu Leu Ala Gly Trp Gln Ser | 275 | 280 | 285 |
| Ala Glu Leu Gly Gly Leu His Trp Gly Gln Asp Tyr Glu Phe Lys | 290 | 295 | 300 |
| Val Arg Pro Ser Ser Gly Arg Ala Arg Gly Pro Asp Ser Asn Val | 305 | 310 | 315 |
| Leu Leu Leu Arg Leu Pro Glu Lys Val Pro Ser Ala Pro Pro Gln | 320 | 325 | 330 |
| Glu Val Thr Leu Lys Pro Gly Asn Gly Thr Val Phe Val Ser Trp | 335 | 340 | 345 |
| Val Pro Pro Pro Ala Glu Asn His Asn Gly Ile Ile Arg Gly Tyr | 350 | 355 | 360 |
| Gln Val Trp Ser Leu Gly Asn Thr Ser Leu Pro Pro Ala Asn Trp | 365 | 370 | 375 |
| Thr Val Val Gly Glu Gln Thr Gln Leu Glu Ile Ala Thr His Met | 380 | 385 | 390 |
| Pro Gly Ser Tyr Cys Val Gln Val Ala Ala Val Thr Gly Ala Gly | 395 | 400 | 405 |
| Ala Gly Glu Pro Ser Arg Pro Val Cys Leu Leu Leu Glu Gln Ala | 410 | 415 | 420 |
| Met Glu Arg Ala Thr Gln Glu Pro Ser Glu His Gly Pro Trp Thr | 425 | 430 | 435 |
| Leu Glu Gln Leu Arg Ala Thr Leu Lys Arg Pro Glu Val Ile Ala | 440 | 445 | 450 |
| Thr Cys Gly Val Ala Leu Trp Leu Leu Leu Leu Gly Thr Ala Val | 455 | 460 | 465 |
| Cys Ile His Arg Arg Arg Arg Ala Arg Val His Leu Gly Pro Gly | 470 | 475 | 480 |
| Leu Tyr Arg Tyr Thr Ser Glu Asp Ala Ile Leu Lys His Arg Met | 485 | 490 | 495 |
| Asp His Ser Asp Ser Gln Trp Leu Ala Asp Thr Trp Arg Ser Thr | 500 | 505 | 510 |
| Ser Gly Ser Arg Asp Leu Ser Ser Ser Ser Ser Leu Ser Ser Arg | 515 | 520 | 525 |
| Leu Gly Ala Asp Ala Arg Asp Pro Leu Asp Cys Arg Arg Ser Leu | | | |

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 214

aggactacac ggagcctgtg gagcttcttg ctgtgcgaat tcagctggaa 50

<210> 215

<211> 2749

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1869, 1887

<223> unknown base

<400> 215

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ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100

gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150

ctgaggggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200

tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcaggggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggg 350

cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400

caggaccctg ctgtcctccc tccccttctc ccaccttcca gcctctggct 450

acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agccccagg 500

attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550

agacaggggc tgaggcccct ccattgccag ggacttccca gtacgggcac 600

gaaaggactt ctcagtacac aggaacctct cctcaccag cgacctctcc 650

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aggacaccag tccagctctc agcagtggca gctctaagcc cagggtgtcc 750

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<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly | 1 | 5 | 10 | 15 |
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly | 20 | 25 | 30 | |
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp | 35 | 40 | 45 | |
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg | 50 | 55 | 60 | |
| Cys | Ser | Gly | Thr | Ile | Tyr | Ala | Glu | Glu | Glu | Gly | Gln | Glu | Thr | Met | 65 | 70 | 75 | |
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | 80 | 85 | 90 | |
| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | 95 | 100 | 105 | |
| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | 110 | 115 | 120 | |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | 125 | 130 | 135 | |
| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | 140 | 145 | 150 | |
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | 155 | 160 | 165 | |
| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | 170 | 175 | 180 | |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | 185 | 190 | 195 | |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 200 | | 205 | | 210 |
| Ala Gly Ser Ser | Arg Pro Pro Met Gln | Leu Asp Ser Thr Ser | Ala | | |
| | 215 | 220 | 225 | | |
| Glu Asp Thr Ser | Pro Ala Leu Ser Ser | Gly Ser Ser Lys Pro | Arg | | |
| | 230 | 235 | 240 | | |
| Val Ser Ile Pro | Met Val Arg Ile Leu | Ala Pro Val Leu Val | Leu | | |
| | 245 | 250 | 255 | | |
| Leu Ser Leu Leu | Ser Ala Ala Gly Leu | Ile Ala Phe Cys Ser | His | | |
| | 260 | 265 | 270 | | |
| Leu Leu Leu Trp | Arg Lys Glu Ala Gln | Gln Ala Thr Glu Thr | Gln | | |
| | 275 | 280 | 285 | | |
| Arg Asn Glu Lys | Phe Trp Leu Ser Arg | Leu Thr Ala Glu Glu | Lys | | |
| | 290 | 295 | 300 | | |
| Glu Ala Pro Ser | Gln Ala Pro Glu Gly | Asp Val Ile Ser Met | Pro | | |
| | 305 | 310 | 315 | | |
| Pro Leu His Thr | Ser Glu Glu Glu Leu | Gly Phe Ser Lys Phe | Val | | |
| | 320 | 325 | 330 | | |
| Ser Ala | | | | | |

<210> 217
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 217
 ccctgcagtg cacctacagg gaag 24

<210> 218
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 218
 ctgtcttccc ctgcttggct gtgg 24

<210> 219
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 219
 ggtgcaggaa ggggtgggatc ctcttctctc gctgctctgg ccacatc 47

<210> 220
 <211> 950
 <212> DNA
 <213> Homo sapiens

<400> 220
 ttgtgactaa aagctggcct agcaggccag ggagtgcagc tgcaggcgtg 50
 ggggtggcag gagccgcaga gccagagcag acagccgaga aacagggtga 100
 cagtgtgaaa gaaccagtgg tctcgctctg ttgccagggc tagagtgtac 150
 tggcgtgatc atagctcaact gcagcctcag actcctggac ttgagaaatc 200
 ctctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
 cctgtttctt ctcttctgt gagtggacca cggaggctgg tgagctgcct 300
 gtcattccaa agctcagctc tgagccagag tgggtggtggc tccacctctg 350
 ccgccggcat agaagccagg agcagggtctc tcagaaggcg gtggtgcccc 400
 gctgggatca tgttgttggc cctggtctgt ctgctcagct gcctgctacc 450
 ctccagttag gccaaagctct acggtcggtt tgaactggcc agagtgtac 500
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650
 ggtgcagcaa cctcaccocg aacgtcccca acgtgtgccg gatgtactgc 700
 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
 gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900
 cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Leu Leu Ala Leu Val Cys Leu Leu Ser Cys Leu Leu Pro Ser
 1 5 10 15
 Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu
 20 25 30

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | 35 | 40 | 45 |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | 50 | 55 | 60 |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | 65 | 70 | 75 |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | 80 | 85 | 90 |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | 95 | 100 | 105 |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | 110 | 115 | 120 |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | 125 | 130 | 135 |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | | | | | 140 | 145 | |

<210> 222

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 222

gggatcatgt tgttgccct ggctc 24

<210> 223

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 223

gcaaggcaga ccagtcagc cag 23

<210> 224

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 224

ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225

<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225
agccgctgcc ccgggcccggg cgcgcgcggc ggcaccatga gtccccgctc 50
gtgctcgcgt tcgctgcgcc tctcgtctt cgcgctctt tcagccgcg 100
cgagcaactg gctgtacctg gccaaactgt cgtcgggtgg gagcatctca 150
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200
gatgtgcaag cggaacctgg aagtcattga ctccggtgcg cgcggtgccc 250
agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300
tgctccacac tcgactcctt gcccgctctt ggcaagggtg tgacgcaagg 350
gactcgggag gcggccttcg tgtacgcat ctcttcggca ggtgtggcct 400
ttgcagtgc gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450
gacaggacag tgcattgggt cagccacag ggcttccagt ggtcaggatg 500
ctctgacaac atcgctacg gtgtggcctt ctacagtcg tttgtgatg 550
tgccggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600
cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650
atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700
gagccgtgcc gcccttccgc cagggtgggtc acgcactgaa ggagaagttt 750
gatggtgcca ctgagggtga gccacgcgcg gtgggctcct ccagggcact 800
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tggctgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050
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aaacagtctc ccaccaccta cccaagaga tactggttgt attttttgtt 1200
ctggttttgt ttttgggtcc tcatgttatt tattgccgaa accaggcagg 1250
caacccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300
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agaccacact aggcaggcat ataggtctgc atcctggacc agggatcccg 1850
gctgtgcctt tgcagtcatg cccgagtcac ctttcacagc gctgttcctc 1900
catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950
acacacacac ggacacacac acacacctgc gagagagagg gaggaaaggg 2000
ctgtgccttt gcagtcatgc cagagtcacc tttcacagca ctgttcctc 2049

<210> 226

<211> 351

<212> PRT

<213> Homo sapiens

<400> 226

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Pro | Arg | Ser | Cys | Leu | Arg | Ser | Leu | Arg | Leu | Leu | Val | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Val | Phe | Ser | Ala | Ala | Ala | Ser | Asn | Trp | Leu | Tyr | Leu | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ser | Ser | Val | Gly | Ser | Ile | Ser | Glu | Glu | Glu | Thr | Cys | Glu | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Lys | Gly | Leu | Ile | Gln | Arg | Gln | Val | Gln | Met | Cys | Lys | Arg | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Glu | Val | Met | Asp | Ser | Val | Arg | Arg | Gly | Ala | Gln | Leu | Ala | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Cys | Gln | Tyr | Gln | Phe | Arg | Asn | Arg | Arg | Trp | Asn | Cys | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Leu | Asp | Ser | Leu | Pro | Val | Phe | Gly | Lys | Val | Val | Thr | Gln | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Arg | Glu | Ala | Ala | Phe | Val | Tyr | Ala | Ile | Ser | Ser | Ala | Gly | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

<210> 228
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 228
 tgggtgggaga ctgttttaaat tatcggcc 28

<210> 229
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 229
 tgcttcgtca agtgccggca gtgccagcgg ctcgtggagt t 41

<210> 230
 <211> 1355
 <212> DNA
 <213> Homo sapiens

<400> 230
 cggacgcgtg ggcggacgcg tgggcggaac cgtgggcgga cgcgtgggct 50
 ggggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcgga 100
 gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150
 aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
 ggctgtgatt ctgagtatcc tattgtccaa ggccctccacg gagcgcgcg 250
 cgctgcttga cgccacgac ctgctgagga caaacgcctc gaagcagacg 300
 gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
 ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
 cgcaggcgaa gctgatggag caggagagcg cctgcgga actgctgag 450
 cgcgtgaccc agggcttggc tgaagccggc aggggcccgtg aggacgtccg 500
 cactgagctg ttccgggcgc tggaggccgt gaggtccag aacaactcct 550
 gcgagccgtg cccacgtcg tggctgtcct tcgagggtc ctgctacttt 600
 ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgaga 650
 tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggttcc 700
 tcactcgga caccgctggc cgtgggttact ggctgggcct gagggctgtg 750

cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg tatcctgggg 1000
gctgctcacc tccctggctc ctggagctga ttgccaaaga gtttttttct 1050
tcctcatcca ccgctgctga gtctcagaaa cacttggcc aacatagccc 1100
tgtccagccc agtgccctggg ctctggggacc tccatgccga cctcatccta 1150
actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200
ctcctgcgtc ccgctgatat gcctccactt ctctccctaa ccaaggttag 1250
gtgactgagg actggagctg tttggttttc tcgcattttc caccaaaactg 1300
gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350
aaaaa 1355

<210> 231
<211> 293
<212> PRT
<213> Homo sapiens

<400> 231
Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu
1 5 10 15
Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg
20 25 30
Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp
35 40 45
Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg
50 55 60
Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser
65 70 75
Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp
80 85 90
Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr
95 100 105
Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu
110 115 120
Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala
125 130 135

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gagggatgatc cgaccggggg aaggctcgctg ggcagggcga 50
 gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctccttt 100
 ctcccacgtc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150
 agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200
 gcttaaataag gagctccggg ctctggctgg gaccgaccg ctgccggccg 250
 cgctcccgt gtcctgccc ggtgatggaa aaccccagcc cggccgccgc 300
 cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgcgcccg 350
 gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
 tacagcatca ccttcacggg caagtggagc cagacggcct tccccagca 450
 gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctgggggccg 500
 cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
 gggctgcgcg actttgcgga gcgcggcgag gcctggggcg tgatgaagga 600
 gatcaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
 cgcccgcctt ccccgagcgc accgggcaga cgtcggcgga gctggaggtg 700
 cagcgcaggc actcgctggt ctcgtttgtg gtgcgcatcg tgcccagccc 750
 cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800
 ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
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 ggtgaccgag ataacgtcct cctctcccag ccaccgggc aactccttct 950
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tggactgcga ggtctccctg tggtcgtcct ggggactgtg cggaggccac 1150
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 ccgagggcac aggggggtttc gcgctgtctc tgaccgcggt gaggccgcgc 1400
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 gtctgtcttc agcctcctcc tcctgcagga taaagtcac cccaaggctc 1550
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 agcggggggcc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Pro | Ser | Pro | Ala | Ala | Ala | Leu | Gly | Lys | Ala | Leu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Leu | Leu | Ala | Thr | Leu | Gly | Ala | Ala | Gly | Gln | Pro | Leu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Glu | Ser | Ile | Cys | Ser | Ala | Arg | Ala | Pro | Ala | Lys | Tyr | Ser | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Phe | Thr | Gly | Lys | Trp | Ser | Gln | Thr | Ala | Phe | Pro | Lys | Gln | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Leu | Phe | Arg | Pro | Pro | Ala | Gln | Trp | Ser | Ser | Leu | Leu | Gly | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | His | Ser | Ser | Asp | Tyr | Ser | Met | Trp | Arg | Lys | Asn | Gln | Tyr | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Asn | Gly | Leu | Arg | Asp | Phe | Ala | Glu | Arg | Gly | Glu | Ala | Trp | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Met | Lys | Glu | Ile | Glu | Ala | Ala | Gly | Glu | Ala | Leu | Gln | Ser | Val |

<210> 238
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 238
 caggactcgc tacgtccg 18

 <210> 239
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 239
 cagccccttc tcctcctttc tccc 24

 <210> 240
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 240
 gcagttatca gggacgcact cagcc 25

 <210> 241
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 241
 ccagcgagag gcagatag 18

 <210> 242
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 242
 cggtcaccgt gtcctgcggg atg 23

 <210> 243
 <211> 42
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 243

cagccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894

<212> DNA

<213> Homo sapiens

<400> 244

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aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300
cagaaatfff atccaactff gtttgggaagc ttattatgac aataccatff 350
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
tcattcacgg ttgcgtffta atcggagagg actggttgcc atggcaaattg 500
ctggttctca tgataatggc agccagttff tcttcacact gggtcgagca 550
gatgaactta acaataagca taccatctff ggaaaggffa caggggatac 600
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650
gaccacataa tccacacaaa ataaaaagct gtgaggttff gtttaatcct 700
tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aatfftagtt 800
tactffcatf tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900
ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaagtg 950
atgcaccaga tffagttgat gatggagaag atgaaagtgc agagcatgat 1000
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050
aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150
agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200
tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gccctccag 1250
atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300
aggaagcaac agtcaaagaa gggaaacttcc cggaagatc agacccttgc 1350
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acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700
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tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggtg 1800
catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850
taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245

<211> 472

<212> PRT

<213> Homo sapiens

<400> 245

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Asn | Ile | Tyr | Ile | Gln | Glu | Pro | Pro | Thr | Asn | Gly | Lys | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Lys | Thr | Thr | Ala | Gly | Asp | Ile | Asp | Ile | Glu | Leu | Trp | Ser |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Lys | Glu | Ala | Pro | Lys | Ala | Cys | Arg | Asn | Phe | Ile | Gln | Leu | Cys | Leu |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Glu | Ala | Tyr | Tyr | Asp | Asn | Thr | Ile | Phe | His | Arg | Val | Val | Pro | Gly |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Phe | Ile | Val | Gln | Gly | Gly | Asp | Pro | Thr | Gly | Thr | Gly | Ser | Gly | Gly |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Glu | Ser | Ile | Tyr | Gly | Ala | Pro | Phe | Lys | Asp | Glu | Phe | His | Ser | Arg |
| | | | 80 | | | | | 85 | | | | | | 90 |
| Leu | Arg | Phe | Asn | Arg | Arg | Gly | Leu | Val | Ala | Met | Ala | Asn | Ala | Gly |
| | | | 95 | | | | | 100 | | | | | | 105 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | His | Asp | Asn | Gly | Ser | Gln | Phe | Phe | Phe | Thr | Leu | Gly | Arg | Ala | 110 | 115 | 120 |
| Asp | Glu | Leu | Asn | Asn | Lys | His | Thr | Ile | Phe | Gly | Lys | Val | Thr | Gly | 125 | 130 | 135 |
| Asp | Thr | Val | Tyr | Asn | Met | Leu | Arg | Leu | Ser | Glu | Val | Asp | Ile | Asp | 140 | 145 | 150 |
| Asp | Asp | Glu | Arg | Pro | His | Asn | Pro | His | Lys | Ile | Lys | Ser | Cys | Glu | 155 | 160 | 165 |
| Val | Leu | Phe | Asn | Pro | Phe | Asp | Asp | Ile | Ile | Pro | Arg | Glu | Ile | Lys | 170 | 175 | 180 |
| Arg | Leu | Lys | Lys | Glu | Lys | Pro | Glu | Glu | Glu | Val | Lys | Lys | Leu | Lys | 185 | 190 | 195 |
| Pro | Lys | Gly | Thr | Lys | Asn | Phe | Ser | Leu | Leu | Ser | Phe | Gly | Glu | Glu | 200 | 205 | 210 |
| Ala | Glu | Glu | Glu | Glu | Glu | Glu | Val | Asn | Arg | Val | Ser | Gln | Ser | Met | 215 | 220 | 225 |
| Lys | Gly | Lys | Ser | Lys | Ser | Ser | His | Asp | Leu | Leu | Lys | Asp | Asp | Pro | 230 | 235 | 240 |
| His | Leu | Ser | Ser | Val | Pro | Val | Val | Glu | Ser | Glu | Lys | Gly | Asp | Ala | 245 | 250 | 255 |
| Pro | Asp | Leu | Val | Asp | Asp | Gly | Glu | Asp | Glu | Ser | Ala | Glu | His | Asp | 260 | 265 | 270 |
| Glu | Tyr | Ile | Asp | Gly | Asp | Glu | Lys | Asn | Leu | Met | Arg | Glu | Arg | Ile | 275 | 280 | 285 |
| Ala | Lys | Lys | Leu | Lys | Lys | Asp | Thr | Ser | Ala | Asn | Val | Lys | Ser | Ala | 290 | 295 | 300 |
| Gly | Glu | Gly | Glu | Val | Glu | Lys | Lys | Ser | Val | Ser | Arg | Ser | Glu | Glu | 305 | 310 | 315 |
| Leu | Arg | Lys | Glu | Ala | Arg | Gln | Leu | Lys | Arg | Glu | Leu | Leu | Ala | Ala | 320 | 325 | 330 |
| Lys | Gln | Lys | Lys | Val | Glu | Asn | Ala | Ala | Lys | Gln | Ala | Glu | Lys | Arg | 335 | 340 | 345 |
| Ser | Glu | Glu | Glu | Glu | Ala | Pro | Pro | Asp | Gly | Ala | Val | Ala | Glu | Tyr | 350 | 355 | 360 |
| Arg | Arg | Glu | Lys | Gln | Lys | Tyr | Glu | Ala | Leu | Arg | Lys | Gln | Gln | Ser | 365 | 370 | 375 |
| Lys | Lys | Gly | Thr | Ser | Arg | Glu | Asp | Gln | Thr | Leu | Ala | Leu | Leu | Asn | 380 | 385 | 390 |
| Gln | Phe | Lys | Ser | Lys | Leu | Thr | Gln | Ala | Ile | Ala | Glu | Thr | Pro | Glu | | | |

| | | |
|---|-----|-----|
| 395 | 400 | 405 |
| Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met | | |
| 410 | 415 | 420 |
| Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp | | |
| 425 | 430 | 435 |
| Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg | | |
| 440 | 445 | 450 |
| Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met | | |
| 455 | 460 | 465 |
| Arg Glu Lys Lys Glu Arg Arg | | |
| 470 | | |

<210> 246
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 246
 tgcggagatc ctactggcac aggg 24

<210> 247
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 247
 cgagttagtc agagcatg 18

<210> 248
 <211> 18
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 248
 cagatggtgc tgttgccg 18

<210> 249
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 249
caactggaac aggaactgag atgtggatc 29

<210> 250
<211> 24
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 250
ctggttcagc agtgaagg tctg 24

<210> 251
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 251
cctctccgat taaaacgc 18

<210> 252
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 252
gagaggactg gttgccatgg caaatgctgg ttctcatgat aatgg 45

<210> 253
<211> 2456
<212> DNA
<213> Homo sapiens

<400> 253
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catttcgcct tgctgacggc gtcgagccct ggccagacat gtccacaggg 150
ttctccttcg ggtccgggac tctgggctcc accaccgtgg ccgccggcgg 200
gaccagcaca ggcggcggtt tctccttcgg aacgggaacg tctagcaacc 250
cttctgtggg gctcaatatt ggaaatcttg gaagtacttc aactccagca 300
actacatctg ctcttcaag tggttttgga accgggctct ttggatctaa 350
acctgccact ggggttcactc taggaggaac aaatacaggt gccttgaca 400

taagggtggc tatgcaggaa ggagccaaag aggggtttgc cccaccatc 1900
cagggcctgg ggagactagc catggacata cctggggaca agagttctac 1950
ccaccccgagt ttagaactgc aggagctccc tgctgcctcc aggccaaagc 2000
tagagctttt gcctgtttg tgggacctgc actgcccttt ccagcctgac 2050
atcccatgat gcccctctac ttcactgttg acatccagtt aggccaggcc 2100
ctgtcaacac cacactgtgc tcagctctcc agcctcagga caacctcttt 2150
ttttcccttc ttcaaactcct cccacccttc aatgtctcct tgtgactcct 2200
tcttatggga ggtcgacca gactgccact gcccctgtca ctgcaccag 2250
cttggcattt accatccatc ctgctcaacc ttgttcctgt ctgttcacat 2300
tggcctggag gcctagggca ggttgtgaca tggagcaaac ttttggtagt 2350
ttgggatcct ctctcccacc cacacttacc tccccaggg ccactccaaa 2400
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aaaaaa 2456

<210> 254

<211> 545

<212> PRT

<213> Homo sapiens

<400> 254

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Gly | Phe | Ser | Phe | Gly | Ser | Gly | Thr | Leu | Gly | Ser | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Thr | Val | Ala | Ala | Gly | Gly | Thr | Ser | Thr | Gly | Gly | Val | Phe | Ser | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Thr | Gly | Thr | Ser | Ser | Asn | Pro | Ser | Val | Gly | Leu | Asn | Phe | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Leu | Gly | Ser | Thr | Ser | Thr | Pro | Ala | Thr | Thr | Ser | Ala | Pro | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Gly | Phe | Gly | Thr | Gly | Leu | Phe | Gly | Ser | Lys | Pro | Ala | Thr | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Thr | Leu | Gly | Gly | Thr | Asn | Thr | Gly | Ala | Leu | His | Thr | Lys | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Gln | Val | Val | Thr | Lys | Tyr | Gly | Thr | Leu | Gln | Gly | Lys | Gln | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| His | Val | Gly | Lys | Thr | Pro | Ile | Gln | Val | Phe | Leu | Gly | Val | Pro | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Arg | Pro | Pro | Leu | Gly | Ile | Leu | Arg | Phe | Ala | Pro | Pro | Glu | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | |
|---|-----|-----|
| 425 | 430 | 435 |
| Leu Val Leu Leu Thr Gln Gly Lys Val Ser Ser Val Pro Tyr Leu | | |
| 440 | 445 | 450 |
| Leu Gly Val Asn Asn Leu Glu Phe Asn Trp Leu Leu Pro Tyr Asn | | |
| 455 | 460 | 465 |
| Ile Thr Lys Glu Gln Val Pro Leu Val Val Glu Glu Tyr Leu Asp | | |
| 470 | 475 | 480 |
| Asn Val Asn Glu His Asp Trp Lys Met Leu Arg Asn Arg Met Met | | |
| 485 | 490 | 495 |
| Asp Ile Val Gln Asp Ala Thr Phe Val Tyr Ala Thr Leu Gln Thr | | |
| 500 | 505 | 510 |
| Ala His Tyr His Arg Glu Thr Pro Met Met Gly Ile Cys Pro Ala | | |
| 515 | 520 | 525 |
| Gly His Ala Thr Thr Arg Met Lys Ser Thr Cys Ser Trp Ile Leu | | |
| 530 | 535 | 540 |
| Pro Gln Glu Trp Ala | | |
| 545 | | |

<210> 255
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 255
 aggtgcctgc aggagtcctg ggg 23

<210> 256
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 256
 ccacctcagg aagccgaaga tgcc 24

<210> 257
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 257
 gaacggtaca agtggtgcg cttcagcgag gactgtctgt acctg 45

<210> 258
<211> 2764
<212> DNA
<213> Homo sapiens

<400> 258
gagaacaggc ctgtctcagg caggccctgc gcctcctatg cggagatgct 50
actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100
ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150
tgcatctctg tgccctgctc tttctcctac ccccgacaag actggacagg 200
gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250
aggggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300
acccggggcc gattccagct cactggggat cccgccaagg ggaactgctc 350
cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400
gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450
tttctaaaag taacagtgtc cagcttcacg cccagacccc aggaccacaa 500
caccgacctc acctgccatg tggacttctc cagaaagggg gtgagcgcac 550
agaggaccgt ccgactccgt gtggcctatg cccccagaga ccttgttatc 600
agcatttcac gtgacaacac gccagccctg gagccccagc cccagggaaa 650
tgtcccatac ctggaagccc aaaaaggcca gttcctgcgg ctctctgtg 700
ctgctgacag ccagccccct gccacactga gctgggtcct gcagaacaga 750
gtcctctcct cgtcccatcc ctggggccct agaccctgg ggctggagct 800
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ccagagaacc tgagagtgat ggtttcccaa gcaaacagga cagtccctgga 950
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ggagctgcct cgggttcaag tggagcacga aggagagttc acctgccacg 1150
ctcggcacc cactgggtcc cagcacgtct ctctcagcct ctccgtgcac 1200
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aatcggcatc acggctcttc ttttctctg cctggccctg atcatcatga 1300

<210> 260
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 260
 caaagcctgc gcctggctctg tg 22

<210> 261
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 261
 ttctggagcc cagaggggtgc tgag 24

<210> 262
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 262
 ggagctgccca cccattcaaa tggagcacga aggagagttc acctg 45

<210> 263
 <211> 2857
 <212> DNA
 <213> Homo sapiens

<400> 263
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 actgctgcgt tttatgttgg gaattcctct cctatggcct tgtcttggag 100
 caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150
 ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200
 aatgaatacg actagtcac acatcggcca gctaagatct gatttagaca 250
 atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
 acttttatca ttgatgaaag aacaggtgac atatatgcca tacagaagct 350
 tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400
 tcgctactgg aagggtgtg gaacctgagt ctgagtttgt catcaaagtt 450

tcggatatca atgacaatga accaaaattc ctagatgaac cttatgaggc 500
cattgtacca gagatgtctc cagaaggaac attagttatc cagggtgacag 550
caagtgatgc tgacgatccc tcaagtggta ataatgctcg tctcctctac 600
agcttacttc aaggccagcc atatTTTTtct gttgaaccaa caacaggagt 650
cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700
taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750
acaacaagtg tattaattaa actttcagat gttaatgaca ataagcctat 800
atttaaagaa agtttatacc gcttgactgt ctctgaatct gcacccactg 850
ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900
gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950
tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000
tggattttga gcaccagaac cactacggta ttagagcaaa agttaaaaac 1050
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ttccatatta tgtatttgaa gtttttgaag aaaccacaca gggatcattt 1200
gtaggcgtgg tgtctgccac agaccagac aataggaaat ctcctatcag 1250
gtattctatt actaggagca aagtgttcaa tatcaatgat aatggtacaa 1300
tcactacaag taactcactg gatcgtgaaa tcagtgcctg gtacaaccta 1350
agtattacag ccacagaaaa atacaatata gaacagatct cttcgatccc 1400
actgtatgtg caagttctta acatcaatga tcatgctcct gagttctctc 1450
aatactatga gacttatgtt tgtgaaaatg caggctctgg tcaggtaatt 1500
cagactatca gtgcagtgga tagagatgaa tccatagaag agcaccattt 1550
ttactttaat ctatctgtag aagacactaa caattcaagt tttaaatca 1600
tagataatca agataacaca gctgtcattt tgactaatag aactggtttt 1650
aaccttcaag aagaacctgt cttctacatc tccatcttaa ttgccgacaa 1700
tggaatcccg tcacttacaa gtacaaacac ccttaccatc catgtctgtg 1750
actgtgggtga cagtgggagc acacagacct gccagtacca ggagcttgtg 1800
ctttccatgg gattcaagac agaagttatc attgctattc tcatttgcat 1850
tatgatcata tttgggttta tttttttgac tttgggttta aaacaacgga 1900

gaaaacagat tctatttcct gagaaaagtg aagatttcag agagaatata 1950
 ttccaatatg atgatgaagg ggggtggagaa gaagatacag aggcctttga 2000
 tatagcagag ctgaggagta gtaccataat gcgggaacgc aagactcgga 2050
 aaaccacaag cgctgagatc aggagcctat acaggcagtc tttgcaagtt 2100
 ggccccgaca gtgccatatt caggaaattc attctggaaa agctcgaaga 2150
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 aatgtaggaa gatattaaaa gtagatgaga ggacacaaga tgtagtcgat 2650
 ccttatgcca ttatatcatt atttacttag gaaagagtaa aaataccaaa 2700
 cgagaaaatt taaaggagca aaaatttgca agtcaaatag aaatgtacaa 2750
 atcgagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800
 tatagtcaga gaaattttca tgaattattc catgaagtat tgtttccttt 2850
 atttaaa 2857

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 <211> 772
 <212> PRT
 <213> Homo sapiens

<400> 264
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 Leu Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys
 20 25 30
 Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp
 35 40 45
 Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser
 50 55 60

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gly | Glu | Asn | Ala | Glu | Met | Asp | Tyr | Ser | Ile | Glu | Glu | Asp | Asp | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Thr | Phe | Asp | Ile | Ile | Thr | Asn | His | Glu | Thr | Gln | Glu | Gly | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Ile | Leu | Lys | Lys | Lys | Val | Asp | Phe | Glu | His | Gln | Asn | His | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gly | Ile | Arg | Ala | Lys | Val | Lys | Asn | His | His | Val | Pro | Glu | Gln | Leu | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Met | Lys | Tyr | His | Thr | Glu | Ala | Ser | Thr | Thr | Phe | Ile | Lys | Ile | Gln | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr | Tyr | | |
| | 365 | 370 | 375 | | |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val | Gly | | |
| | 380 | 385 | 390 | | |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile | Arg | | |
| | 395 | 400 | 405 | | |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn | Gly | | |
| | 410 | 415 | 420 | | |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala | Trp | | |
| | 425 | 430 | 435 | | |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu | Gln | | |
| | 440 | 445 | 450 | | |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn | Asp | | |
| | 455 | 460 | 465 | | |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys | Glu | | |
| | 470 | 475 | 480 | | |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val | Asp | | |
| | 485 | 490 | 495 | | |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu | Ser | | |
| | 500 | 505 | 510 | | |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn | Gln | | |
| | 515 | 520 | 525 | | |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn | Leu | | |
| | 530 | 535 | 540 | | |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp | Asn | | |
| | 545 | 550 | 555 | | |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His | Val | | |
| | 560 | 565 | 570 | | |
| Cys Asp Cys Gly | Asp Ser Gly Ser Thr | Gln Thr Cys Gln Tyr | Gln | | |
| | 575 | 580 | 585 | | |
| Glu Leu Val Leu | Ser Met Gly Phe Lys | Thr Glu Val Ile Ile | Ala | | |
| | 590 | 595 | 600 | | |
| Ile Leu Ile Cys | Ile Met Ile Ile Phe | Gly Phe Ile Phe Leu | Thr | | |
| | 605 | 610 | 615 | | |
| Leu Gly Leu Lys | Gln Arg Arg Lys Gln | Ile Leu Phe Pro Glu | Lys | | |
| | 620 | 625 | 630 | | |
| Ser Glu Asp Phe | Arg Glu Asn Ile Phe | Gln Tyr Asp Asp Glu | Gly | | |
| | 635 | 640 | 645 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | Ala | Val | Gln | Ser | Asn | Asn | | | | | | | | | |
| | | | | 770 | | | | | | | | | | | |

<210> 265
 <211> 349
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 24, 60, 141, 226, 228, 249, 252
 <223> unknown base

<400> 265
 atttcaaggc cagccatatt tttntgttga accaacaaca ggagtcataa 50
 gaatattnn taaaatggat agagaactgc aagatgagta ttgggtaatc 100
 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntgaacaac 150
 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200
 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

cttgactgtc tctgaatctg caccc 25

<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgggtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

ccactacggt attagagcaa aagttaaaaa ccatcatggt tcttggagca 50

gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

gcaacctcag cttctagtat ccagactcca gcgccgcccc gggcgcgga 50

cccaaccccg acccagagct tctccagcgg cggcgccagcg agcagggctc 100

cccgccctaa cttcctccgc ggggcccagc caccttcggg agtccgggtt 150

gccacctgc aaactctccg ccttctgcac ctgccacccc tgagccagcg 200

cgggcccccg agcgagtcac ggccaacgcg gggctgcagc tggtgggctt 250

cattctcgcc ttcctgggat ggatcggcgc catcgtcagc actgccctgc 300

cccagtggag gatttactcc tatgcgggcg acaacatcgt gaccgcccag 350

gccatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400

gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450

aagcaacccg tgccttgatg gtggttggca tctcctggg agtgatagca 500

atctttgtgg ccaccgttgg catgaagtgt atgaagtgct tggaagacga 550

tgagggtgcag aagatgagga tggctgtcat tgggggtgcg atatttcttc 600

ttgcaggtct ggctatttta gttgccacag catggtatgg caatagaatc 650
 gttcaagaat tctatgaccc tatgacccca gtcaatgccg ggtacgaatt 700
 tggtcaggct ctcttcaactg gctgggctgc tgccttctctc tgccttctgg 750
 gaggtgccct actttgctgt tctgtcccc gaaaaacaac ctcttaccca 800
 acaccaaggc cctatccaaa acctgcacct tocagcgga aagactacgt 850
 gtgacacaga ggcaaaagga gaaaatcatg ttgaaacaaa ccgaaaatgg 900
 acattgagat actatcatta acattaggac cttagaattt tgggtattgt 950
 aatctgaagt atggtattac aaaacaaaca aacaaacaaa aaacccatgt 1000
 gttaaaatac tcagtgctaa acatggctta atcttatttt atcttctttc 1050
 ctcaatatag gagggaagat tttccattt gtattactgc ttccattga 1100
 gtaatcatal tcaaatgggg gaaggggtgc tccttaaata tatatagata 1150
 tgtatatata catgtttttc tattaataat agacagtaaa atactattct 1200
 cattatgttg atactagcat acttaaaata tctctaaaat aggtaaatgt 1250
 atttaattcc atattgatga agatgtttat tgggtatattt tctttttcgt 1300
 ccttatatac atatgtaaca gtcaaatac atttactctt cttcattagc 1350
 tttgggtgcc tttgccacaa gacctagcct aatttaccaa ggatgaattc 1400
 tttcaattct tcatgcgtgc ctttttcata tacttatttt attttttacc 1450
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 tcattggtct ctatctcctg aatctaacac atttcatagc ctacatttta 1550
 gtttctaaag ccaagaagaa tttattacaa atcagaactt tggaggcaaa 1600
 tctttctgca tgaccaaagt gataaattcc tgttgacctt cccacacaat 1650
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 aattgagtag ctgcatgctg ttccccagg tgttgtaaca caactttatt 1750
 gattgaattt ttaagctact tattcatagt tttatatccc cctaaactac 1800
 ctttttgttc cccattcctt aattgtattg ttttccaag tgtaattatc 1850
 atgcgtttta tatcttcta ataagggtgtg gtctgtttgt ctgaacaaag 1900
 tgctagactt tctggagtga taatctggtg acaaatttc tctctgtagc 1950
 tgtaagcaag tcaacttaac tttctacctc ttttttctat ctgccaatt 2000
 gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050

tttatattac tcttattctt tgaacatgaa ctatgcctat gtagtgtctt 2100
tatttgctca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
ctctctacca gtctatttcc actgaacaaa acctacgcac ataccttcat 2300
gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350
gtgtctgaca tgtttggtgt ctgttccatt ttaacaactg ctcttacttt 2400
tccagtctgt acagaatgct atttcaactg agcaagatga tgtaatggaa 2450
aggggtgttg cactggtgtc tggagacctg gatttgagtc ttggtgctat 2500
caatcaccgt ctgtgtttga gcaaggcatt tggtgtgtgt aagcttattg 2550
cttcatctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600
gatgttggtg ggatccagtg agatagaata catgtaagtg tggttttgta 2650
atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700
gttttggtgt tgcttttcaa atgtttgaaa ataaaaaaaaa tgttaag 2747

<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

Met Ala Asn Ala Gly Leu Gln Leu Leu Gly Phe Ile Leu Ala Phe
1 5 10 15

Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp
20 25 30

Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala
35 40 45

Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly
50 55 60

Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser
65 70 75

Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu
80 85 90

Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met
95 100 105

Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val
110 115 120

| | | |
|-----------------|---------------------|-------------------------|
| Ile Gly Gly Ala | Ile Phe Leu Leu Ala | Gly Leu Ala Ile Leu Val |
| 125 | 130 | 135 |
| Ala Thr Ala Trp | Tyr Gly Asn Arg Ile | Val Gln Glu Phe Tyr Asp |
| 140 | 145 | 150 |
| Pro Met Thr Pro | Val Asn Ala Arg Tyr | Glu Phe Gly Gln Ala Leu |
| 155 | 160 | 165 |
| Phe Thr Gly Trp | Ala Ala Ala Ser Leu | Cys Leu Leu Gly Gly Ala |
| 170 | 175 | 180 |
| Leu Leu Cys Cys | Ser Cys Pro Arg Lys | Thr Thr Ser Tyr Pro Thr |
| 185 | 190 | 195 |
| Pro Arg Pro Tyr | Pro Lys Pro Ala Pro | Ser Ser Gly Lys Asp Tyr |
| 200 | 205 | 210 |

Val

<210> 271
 <211> 564
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 21, 69, 163, 434, 436, 444
 <223> unknown base

<400> 271
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 ggatggatcg gcgccatont cacactgccc ttccccagtg gaggatttta 100
 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150
 ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
 ctttgactcc ttgtgaatc tgagcagcac attgcaagca acccgtgcct 250
 tgatgggtgg tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
 gttggcatga agtgtatgaa gtgcttgga gacgatgagg tgcagaagat 350
 gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
 ttttagttgc cacagcatgg tatggcaata gaancnttca acantttctat 450
 gaccctatga cccagtc aa tgccaggtac gaatttggtc aggctctctt 500
 cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
 gctgttcctg tccc 564

<210> 272
 <211> 498

<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341
<223> unknown base

<400> 272
acccttgacc caacgcggcc ccccgaccgn ttcattggcca aacgcgggnc 50
tccagctgtt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100
cntcagcact gccctgcccc agtggaggat ttactcctat nccggcnaca 150
acatcgtgac cgccaggcc ntgtacgagg ggctgtggat gtcttgctg 200
tcgcagagca ccgggcagat ccagtgc aaa gtctttgact cccttgctga 250
atctgagcag cacattgcaa gcaaccctg ccttgatggg ggttgcatc 300
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtga 350
tgaagtgtt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
gggggcgcga tatttcttct tgcaggtctg gctatttttag ttgccacagc 450
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273
<211> 552
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base

<400> 273
gggcccggacc attatccaac cgggntcact gttggctcat ctccctcctg 50
gatgaancgc gccatcntca gactccctgc cccatggaga tttncctat 100
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150
cngcgtgtcg caganaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac cntgcccctg atggtggttg 250
gcatcctcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttggaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgagcag tctggctatt tnnngttgcc 400
acagcatggg atggcaatag aatcgttcaa gaattctatg accctatgac 450

cccagtcaat gccaggtagc aatttgggtca ggctctcttc actgggtggg 500
 ctgctgcttc tctctgcctt ctgggaggtg ccctactttg ctgttctctgc 550
 ga 552

<210> 274
 <211> 526
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407
 <223> unknown base

<400> 274
 attctcccct cctggatgga tcgcnccacc gtcacattgc cttccccan 50
 tggaggattn actcctatgc tggcgacaac atcgtgaccc ccaggccat 100
 ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150
 ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
 caaccctgtgc cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
 ttgtggccac cgttggcatg aagtgtatga agtgcttggg agacgatgag 300
 gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttgttg 350
 caggtctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400
 cnngnnntct atgaccctat gacccagtc aatgccaggt acgaatttgg 450
 tcaggctctc ttactgggtt gggctgctgc ttctctctgc cttctgggag 500
 gtgccctact ttgctgttcc tgtccc 526

<210> 275
 <211> 398
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274
 <223> unknown base

<400> 275
 agagcaccgg cagatcccag tncaaagtct ttgacccttg ctgaatctga 50
 gcagcacatt ncaagcaacc ccttgcccttg aagggtggtt ncatcccccc 100
 tgggagtga tagcaatctt tgtggccacc gttggcatga agtntatgaa 150
 gtgcttggaa gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250
 tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300
 tgccagggtac gaatttggtc aggcctctctt cactggctgg gctgctgctt 350
 ctctctgcct tctgggaggt gccctacttt gctgttcttg tccccgaa 398

<210> 276
 <211> 495
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476
 <223> unknown base

<400> 276
 agcaatgccc tgccccagct ggaggattaa ttccctatgnt ggggacaaca 50
 ttgtgacngc ccaggccatg tacggggggc tgtggatgtc ctgcgtgtcg 100
 cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150
 gagcagcaca ttgcaagcaa cccgtgcctt gatggtggtt ggcattcttc 200
 tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250
 tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300
 cgcgatattt ctntttgcag gtctggctat tttagttgcc acagcatggt 350
 atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400
 gccagggtacg aatttggtca ggctttnttc actggctggg ctgctgcttn 450
 tttctgcctt ntgggaggtg ccctantttg ctgttctctg gaacc 495

<210> 277
 <211> 200
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 34, 87, 138, 147, 163, 165-166, 172
 <223> unknown base

<400> 277
 tcataggggg gcgcgatatt ttttcttgca ggtntgggta ttttagttgc 50
 cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100
 cccagtcgaa tgccagggtac gaatttggtc aggcctctntt cactggntgg 150
 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcttg 200

<210> 278
 <211> 542
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
 <223> unknown base

<400> 278
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 ttacncctat gctggcgaac aacatcntga ccgccaggc catgtacgag 100
 gggctgtgga atgtcctgcg tgtccagag caccgggcag atccagtgc 150
 aagtctttga ctcttgctg aatctgagca gcacattgca agcaaccntg 200
 ccttgatggt gggtggcatc ctctgggag tgatagcaat ctttgtggcc 250
 accgttggca tgaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300
 agatgaggat ggctgtcatt gggggcgga ttttcttct tgcaggctctg 350
 gctatttttag nngccacagc atggtatggc aatcagacc nntcanaaac 400
 tctatgacc tatgaccca gtcaatgcc ggtacgaatt tggtcaggct 450
 ctcttactg gctgggctgc tgcttctctc tgccttctgg gaggtgccct 500
 actttgctgt tcctgtcccc gaaaaacaac ctcttacc ca 542

<210> 279
 <211> 548
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 90, 115, 147, 228, 387
 <223> unknown base

<400> 279
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 ccatcgtcag cactgocctg ccccatggag gatttactcn tatgctggcg 100
 acaacatcgt gaccnccag gccatgtacg aggggctgtg gatgtcngcg 150
 tgctgcagag caccgggcag atccagtgc aagtctttga ctcttgctg 200
 aatctgagca gcacattgca agcaaccntg ccttgatggt gggtggcatc 250
 ctctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
 gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

ggggcgcgat attttcttctt gcaggctctg ctatttntag ttgccacagc 400
 atggtatggc aatagaatcg ttcaagaatt ctatgaccot atgaccccag 450
 tcaatgccag gtacgaattt ggtcaggctc tcttcaactgg ctgggctgct 500
 gcttctctct gccttctggg aggtgcccta ctttctgtgt cctgcgaa 548

<210> 280
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220> .
 <223> Synthetic oligonucleotide probe

<400> 280
 cgagcgagtc atggccaacg c 21

<210> 281
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220> .
 <223> Synthetic oligonucleotide probe

<400> 281
 gtgtcacacg tagtctttcc cgctgg 26

<210> 282
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220> .
 <223> Synthetic oligonucleotide probe

<400> 282
 ctgcagctgt tgggcttcat tctcgccttc ctgggatgga tcg 43

<210> 283
 <211> 2285
 <212> DNA
 <213> Homo sapiens

<400> 283
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 ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccacccgg 100
 tagaggaccc ccgcccgtgc cccgaccggt ccccgccctt ttgtaaaact 150
 taaagcgggc gcagcattaa cgcttcccgc cccggtgacc tctcaggggt 200
 ctccccgcca aagggtgtcc gccgctaagg aacatggcga aggtggagca 250
 ggtcctgagc ctcgagccgc agcagagct caaattccga ggtcccttca 300

ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcgga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcatc aaagacagaa acaccaatag tgtctaagtc 700
tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750
gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800
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ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050
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ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200
ctttattaat gacaagggaa accatgagta atgccacaat ggcatattgt 1250
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300
tctcttaaaa tgacaccctt cctcgctgtg tgggtgctggc ccttggggag 1350
ctggagccca gcatgctggg gagtgcggtc agctccacac agtagtcccc 1400
acgtggccca ctcccgccc aggtgcttt cegtgtcttc agttctgtcc 1450
aagccatcag ctcttgga ctgatgaaca gagtcagaag cccaaaggaa 1500
ttgcactgtg gcagcatcag acgtactcgt cataagtgag aggcgtgtgt 1550
tgactgattg acccagcgt ttggaaataa atggcagtgc ttgtttcact 1600
taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg 1650
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcatct 1700
catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750

ctctgttggg tgaactggta ttgctgctgg agggctgtgg gctcctctgt 1800
ctctggagag tctggtcattg tggaggtggg gtttattggg atgctggaga 1850
agagctgcca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900
gggagggaaa ttctcagtag tgacagtcaa ctctaggtta ctttttttaa 1950
tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000
actcacactt ccagcgccca ggtccaagtc tgagcctgac ctccccttgg 2050
ggacctagcc tggagtcagg acaaattgat cgggctgcag agggttagaa 2100
gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150
tcagcgaatc cttctagtag tagttgagag tttgactgtg aattaatttt 2200
atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284
<211> 243
<212> PRT
<213> Homo sapiens

<400> 284
Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu
1 5 10 15
Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu
20 25 30
Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys
35 40 45
Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile
50 55 60
Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro
65 70 75
Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val
80 85 90
Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val
95 100 105
Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg
110 115 120
Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val
125 130 135
Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr
140 145 150

Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu
155 160 165
Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val
170 175 180
Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly
185 190 195
Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala
200 205 210
Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu
215 220 225
Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys
230 235 240
Ile Ala Leu

<210> 285
<211> 418
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 40, 53, 68, 119, 134, 177-178, 255
<223> unknown base

<400> 285
gtcagtccttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50
tcnagcgccc aggtccangt ctgagcctga cttccccttg gggacctagc 100
ctggagtcag gacaatggnt cgggctgcag aggnntagaa gcgagggcac 150
cagcagtttt ggggtggggag caagggngga gagaaactct tcagcgaatc 200
cttctagtac tagttgagag tttgactgtg aattaatttt atgccataaa 250
agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400
gttaacttta aaatgagc 418

<210> 286
<211> 543
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 73, 97

<223> unknown base

<400> 286

tattgtaaa gccattttaa accattggta ggccttggt catgatgctg 50
 gattacctcc ttaaattgaca ccnttctctg cctgttggtg ctggccnttg 100
 gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
 gtccccacgt ggccactcc cggcccagge tgctttccgt gtcttcagtt 200
 ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
 aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgaagg 300
 cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350
 gttcacttaa agggaccaag ctaaattgta ttggttcatg tagtgaagtc 400
 aaactgttat tcagagatgt ttaatgcata ttttaacttat ttaatgtatt 450
 tcattctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
 gctgaactct gttgggtgaa ctgggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50
 cttgtagagg tagnatgcac cnggctggta aattggattg gtggatccac 100
 catatccatg ggattttaaatt ttatcataac catgtgtaaa aagaaattaa 150
 tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
 acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
 agttaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

<400> 288
 ggtggcccat tcccggccca ggctgcttcc cggtnntcag ttctgtccaa 50
 gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
 gcaactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
 actgattgac ccagcgcttt ggaaataaat ggcagtgcctt tgttcantta 200
 aagggaccaaa gctaaatttg tattgggttca tgtagtgaag tcaaactggt 250
 attcagagat gtttaattgca tatttaantt atttaattga tttnatntca 300
 tgtttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
 ntgttggttg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400
 ttggagagtc tggatcatgtg gaggtggg 428

<210> 289
 <211> 320
 <212> DNA
 <213> Homo sapiens

<400> 289
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
 tactcgtcat aagtgagagg cgtgtgttga ctgattgacc cagcgctttg 150
 gaaataaatg gcagtgccttt gttcaactta agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
 atttaactta tttaatgtat ttcattctcat gttttcttat tgtcacaaga 300
 gtacagttaa tgctgcgtgc 320

<210> 290
 <211> 609
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
 447, 481, 513, 532, 584, 598
 <223> unknown base

<400> 290
 aaacctttaa aagttgaggg gaaaagaatg atoctttatt aatgacaagg 50
 gaaacctn gn gtaatgccac aatggcatat tgtaaattgc attttaaaca 100
 ttggtaggcc ttggtacatg atgctggatt acctctotta aaatgacacc 150
 cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200

ggggagtgcg gtctgctcca cacagtagtc cccangtggc ccantcccgg 250
 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300
 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccagc 400
 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
 atttgtattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
 atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550
 acaagggtag agttaatgct gcgtgctgct gaantctgtt ggggtgaantg 600
 gtattgctg 609

<210> 291
 <211> 493
 <212> DNA
 <213> Homo sapiens

<400> 291
 ggcccttggg gagctggagc ccagcatgct ggggagtgcg gtcagctcca 50
 cacagtagtc cccacgtggc ccaactcccgg cccaggctgc tttccgtgtc 100
 ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
 aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
 gagaggcgtg tgttgactga ttgaccagc gctttggaaa taaatggcag 250
 tgctttgttc acttaaaggg accaagctaa atttgtattg gttcatgtag 300
 tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350
 atgtatttca tctcatgttt tcttattgtc acaagagtag agttaatgct 400
 gcgtgctgct gaactctgtt ggggtgaactg gtattgctgc tggagggctg 450
 tgggctcctc tgtctctgga gagtctgggc atgtggaggt ggg 493

<210> 292
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 292
 gcaccaccgt aggtacttgt gtgaggc 27

<210> 293
 <211> 23
 <212> DNA

aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900
agctagtggg ggtgaccaa gagaggggtac cagagagcat ctgcaggaga 950
gagcgaaggg tgggagaaga agaaaaaat ctggccgggg tcagaggatt 1000
gccgaagggg ggccttcctt tcagtggacc cgggtcaaga ataccacat 1050
tccgaagggc tgggcacgag gaggcattgg ggacgctacc ttggactatg 1100
actatgctct tctggagctg aagcgtgctc aaaaaagaa atacatggaa 1150
cttggaatca gcccaacgat caagaaaatg cctgggtggaa tgatccactt 1200
ctcaggattt gataacgata gggctgatca gttggctctat cggttttgca 1250
gtgtgtccga cgaatccaat gatctccttt accaatactg cgatgctgag 1300
tcgggctcca ccggttcggg ggtctatctg cgtctgaaag atccagacaa 1350
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cccctaaaat acgccagat ttgcctctgg attcacggga acgatgccaa 1500
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atgcctggac ttgaactctg tcaatagcat ttcaacattt ttcaaatca 1650
ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700
gtgggcactt caatgccaag tatatactct tctttacatg gtgatgagtt 1750
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ctcagggtcc tactctaaga agaatcta ataggatgctg ttgtgtatta 1900
aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950
atagagacag aaagttacaa cacagtittg actactctga gatggatcca 2000
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attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150
caatgtgtat tatttaaaaa tgggagaaat agtttgttct atgaaataaa 2200
cctagtttag aaatagggaa gctgagacat ttttaagatct caagttttta 2250
tttaactaat actcaaaata tggacttttc atgtatgcat agggaagaca 2300

<220>
<223> Synthetic oligonucleotide probe

<400> 298
catcgttccc gtgaatccag aggc 24

<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 299
gaagggaggc cttcctttca gtggacccgg gtcaagaata ccac 45

<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens

<400> 300
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ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100
tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
gcccatggag tgaatgtca cgcacctgag ggggaggggc ctctactct 300
ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400
ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
gaatggcttc ctgtgtctaa tgacctgac aacctatgtt cactcaagtg 500
ccaagccaaa ggaacaaccc tggttgttga actagcaoct aaggtcttag 550
atggtacgag ttgctataca gaatctttgg atatgtgcat cagtggttta 600
tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650
taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
ggcagtataa atcccagctc tccgcaacca aatcggatga tactgtggtt 750
gcacttcctt atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaaacca aaacctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900

cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950
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tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700
gccctcgtaa gttgtaaaag cacagactgt tctatatTTTg aaactgtttt 1750
gtttaaagaa agcagtgtct cactggttgt agctttcatg gggtctgaac 1800
taagtgtaat catctacca aagctTTTTg gctctcaaat taaagattga 1850
ttagtttcaa aaaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Cys | Cys | Arg | Arg | Ala | Thr | Pro | Gly | Thr | Leu | Leu | Leu | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Phe | Leu | Leu | Leu | Ser | Ser | Arg | Thr | Ala | Arg | Ser | Glu | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Asp | Gly | Leu | Trp | Asp | Ala | Trp | Gly | Pro | Trp | Ser | Glu | Cys |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Thr | Cys | Gly | Gly | Gly | Ala | Ser | Tyr | Ser | Leu | Arg | Arg | Cys |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Ala Ser Asp Gly | Tyr Lys Gln Ile Met | Pro Tyr Asp Leu Tyr | His | | |
| | 365 | 370 | 375 | | |
| Pro Leu Pro Arg | Trp Glu Ala Thr | Pro Trp Thr Ala Cys Ser | Ser | | |
| | 380 | 385 | 390 | | |
| Ser Cys Gly Gly | Gly Ile Gln Ser Arg | Ala Val Ser Cys Val | Glu | | |
| | 395 | 400 | 405 | | |
| Glu Asp Ile Gln | Gly His Val Thr Ser | Val Glu Glu Trp Lys | Cys | | |
| | 410 | 415 | 420 | | |
| Met Tyr Thr Pro | Lys Met Pro Ile Ala | Gln Pro Cys Asn Ile | Phe | | |
| | 425 | 430 | 435 | | |
| Asp Cys Pro Lys | Trp Leu Ala Gln Glu | Trp Ser Pro Cys Thr | Val | | |
| | 440 | 445 | 450 | | |
| Thr Cys Gly Gln | Gly Leu Arg Tyr Arg | Val Val Leu Cys Ile | Asp | | |
| | 455 | 460 | 465 | | |
| His Arg Gly Met | His Thr Gly Gly Cys | Ser Pro Lys Thr Lys | Pro | | |
| | 470 | 475 | 480 | | |
| His Ile Lys Glu | Glu Cys Ile Val Pro | Thr Pro Cys Tyr Lys | Pro | | |
| | 485 | 490 | 495 | | |
| Lys Glu Lys Leu | Pro Val Glu Ala Lys | Leu Pro Trp Phe Lys | Gln | | |
| | 500 | 505 | 510 | | |
| Ala Gln Glu Leu | Glu Glu Gly Ala Ala | Val Ser Glu Glu Pro | Ser | | |
| | 515 | 520 | 525 | | |

<210> 302
 <211> 1533
 <212> DNA
 <213> Homo sapiens

<400> 302
 cggacgcgtg ggcggcggct gcggaactcc cgtggagggg ccggtggggc 50
 ctcgggcctg acagatggca gtggccactg cggcggcagt actggccgct 100
 ctgggcgggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150
 ccagcggctg cgcagaggcg gggaccccgg cctcatgcac gggaagactg 200
 tgctgatcac cggggcggaac agcggcctgg gccgcgccac ggccgccgag 250
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300
 cgccgaggag gcggcgggtc agctccgccg cgagctccgc caggccgcgcg 350
 agtgcggccc agagcctggc gtcagcgggg tgggcgagct catagtccgg 400
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gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500
tccagtgtcc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550
gtgaaccatc tggggcactt tctactcacc aatctttctcc ttggactcct 600
caaaagttca gctcccagca ggattgtggt agttttcttcc aaactttata 650
aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700
aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750
ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800
atcctggtat tgtacggaca aatctgggga ggcacataca cattccactg 850
ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900
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cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050
agtgatggtt ggctgctaa aataggaaca aggagtaaaa gagctgttta 1100
taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150
acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200
ggtacatgtg ggtattttgg agttactgaa aaattatit tgggataaga 1250
gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300
aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350
tggatgacat attaataat gtcagaatta agtgactcaa agtgctatcg 1400
agaggttttt caagtatctt tgagtttcat ggccaaagt ttaactagtt 1450
ttactacaat gtttggtgtt tgtgtggaaa ttatctgcct ggtgtgtgca 1500
cacaagtctt acttgaata aatttactgg tac 1533

<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Ala | Thr | Ala | Ala | Ala | Val | Leu | Ala | Ala | Leu | Gly | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Ala | Leu | Trp | Leu | Ala | Ala | Arg | Arg | Phe | Val | Gly | Pro | Arg | Val | Gln |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Arg | Leu | Arg | Arg | Gly | Gly | Asp | Pro | Gly | Leu | Met | His | Gly | Lys | Thr |
| | | | | 35 | | | | | 40 | | | | 45 | |

<210> 304
 <211> 521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 34, 62, 87, 221, 229
 <223> unknown base

<400> 304
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 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttgagatt 250
 actgaaaaat tatttttggg ataagagaat ttcagcaaag atgtttttaa 300
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
 tggaaattat ctgcctggct t 521

<210> 305
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 305
 ccaggaaatg ctccaggaag agcc 24

<210> 306
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 306
 gcccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 307
aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens

<400> 308
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cggagcccag ccctttccta acccaaccca acctagcca gtcccagccg 100
ccagcgcctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
atagatgaaa ttttaaacaa tgctgatggt gcttttagtaa atttttatgc 300
tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650
cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatggt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccgatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttacia ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttotcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Phe | Glu | Gln | Lys | Asp | Ser | Asp | Asn | Tyr | Arg | Val | Phe | Glu | Arg | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Val | Ala | Asn | Ile | Leu | His | Asp | Asp | Cys | Ala | Phe | Leu | Ser | Ala | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Asp | Val | Ser | Lys | Pro | Glu | Arg | Tyr | Ser | Gly | Asp | Asn | Ile | Ile | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | Lys | Pro | Pro | Gly | His | Ser | Ala | Pro | Asp | Met | Val | Tyr | Leu | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Met | Thr | Asn | Phe | Asp | Val | Thr | Tyr | Asn | Trp | Ile | Gln | Asp | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Val | Pro | Leu | Val | Arg | Glu | Ile | Thr | Phe | Glu | Asn | Gly | Glu | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Thr | Glu | Glu | Gly | Leu | Pro | Phe | Leu | Ile | Leu | Phe | His | Met | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Asp | Thr | Glu | Ser | Leu | Glu | Ile | Phe | Gln | Asn | Glu | Val | Ala | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Leu | Ile | Ser | Glu | Lys | Gly | Thr | Ile | Asn | Phe | Leu | His | Ala | Asp | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Cys | Asp | Lys | Phe | Arg | His | Pro | Leu | Leu | His | Ile | Gln | Lys | Thr | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ala | Asp | Cys | Pro | Val | Ile | Ala | Ile | Asp | Ser | Phe | Arg | His | Met | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Val | Phe | Gly | Asp | Phe | Lys | Asp | Val | Leu | Ile | Pro | Gly | Lys | Leu | Lys | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gln | Phe | Val | Phe | Asp | Leu | His | Ser | Gly | Lys | Leu | His | Arg | Glu | Phe | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| His | His | Gly | Pro | Asp | Pro | Thr | Asp | Thr | Ala | Pro | Gly | Glu | Gln | Ala | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | Asp | Val | Ala | Ser | Ser | Pro | Pro | Glu | Ser | Ser | Phe | Gln | Lys | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ala | Pro | Ser | Glu | Tyr | Arg | Tyr | Thr | Leu | Leu | Arg | Asp | Arg | Asp | Glu | |
| | | | | 395 | | | | | 400 | | | | | 405 | |

Leu

<210> 310
 <211> 182
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure

<222> 36, 48
<223> unknown base

<400> 310
attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182

<210> 311
<211> 598
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base

<400> 311
agaggcctct ctggaagttg tcccgggtgt tcgccgngg agcccgggtc 50
gagaggacna ggtgccgtg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgctg tccctgtcnc gganccagc gtnaccatgc atcctgccgt 200
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gcttttagtca atttttatgc 350
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 312
tgagaggcct ctctggaagt tg 22

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<210> 313
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 313
    gtcagcgatc agtgaaagc 19

<210> 314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 314
    ccagaatgaa gtagctcggc 20

<210> 315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 315
    ccgactcaaa atgcattgtc 20

<210> 316
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 316
    catttggcag gaattgtcc 19

<210> 317
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 317
    ggtgctatag gccaaggg 18

<210> 318
<211> 24
<212> DNA

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50
 cgctgctgct cactgccgcg ctcatcttct togccatttg gcacattata 100
 gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150
 taccctgaat cccctgttac tcccagagta cctcatccac gctttcttct 200
 gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250
 cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300
 tggcccagga ctctatgacc ctacaacat catgaatgca gatattctag 350
 catattgtca gaaggaagga tgggtgcaat tagcttttta tcttctagca 400
 tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450
 caacacacag aagaattggt ccagttaagt gcatgcaaaa agccaccaa 500
 tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactoctta ttttttaa at gtttccacat 600
 ttttgcttgt ggaaagactg ttttcatatg ttataactcag ataaagattt 650
 taaatgggtat tacgtataaa ttaatatata atgattacct ctgggtgttg 700
 cagggttgaa ctgactcttc ttaaggaaca gccataatcc tctgaatgat 750
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800
 cttgtagggc tcatttttgg ttcatgtgaa cagtatctaa ttataaatta 850
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900
 tgggaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950
 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050
 taaatatact tgctttaatt ctttaagcata agtaaacaatg atataaaaat 1100
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaagtgtg 1150
 ttttatttgt aagacattac ttattaagaa attgggttatt atgcttactg 1200
 ttctaactctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322

<211> 144

<212> PRT

<213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Thr | Phe | Ala | Ala | Phe | Cys | Tyr | Met | Leu | Ala | Leu | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Leu | Thr | Ala | Ala | Leu | Ile | Phe | Phe | Ala | Ile | Trp | His | Ile | Ile | Ala |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Phe | Asp | Glu | Leu | Lys | Thr | Asp | Tyr | Lys | Asn | Pro | Ile | Asp | Gln | Cys |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Asn | Thr | Leu | Asn | Pro | Leu | Val | Leu | Pro | Glu | Tyr | Leu | Ile | His | Ala |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Phe | Phe | Cys | Val | Met | Phe | Leu | Cys | Ala | Ala | Glu | Trp | Leu | Thr | Leu |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Gly | Leu | Asn | Met | Pro | Leu | Leu | Ala | Tyr | His | Ile | Trp | Arg | Tyr | Met |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Ser | Arg | Pro | Val | Met | Ser | Gly | Pro | Gly | Leu | Tyr | Asp | Pro | Thr | Thr |
| | | | | 95 | | | | 100 | | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Met | Asn | Ala | Asp | Ile | Leu | Ala | Tyr | Cys | Gln | Lys | Glu | Gly | Trp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Lys | Leu | Ala | Phe | Tyr | Leu | Leu | Ala | Phe | Phe | Tyr | Tyr | Leu | Tyr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Met | Ile | Tyr | Val | Leu | Val | Ser | Ser | | | | | | |
| | | | | 140 | | | | | | | | | | |

<210> 323
 <211> 477
 <212> DNA
 <213> Homo sapiens

<400> 323
 attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50
 tgtaataccc tgaatcccct tgtactccca gagtacctca tccacgcttt 100
 cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150
 atatgcccct cttggcatat catatttgga ggtatatgag tagaccagtg 200
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250
 tctagcatat tgtcagaagg aaggatgggtg caaattagct ttttatcttc 300
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350
 tagaacaaca cacagaagaa ttggtccagt taagtgcattg caaaaagcca 400
 ccaaataaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450
 gaatctgatc agttacttta aaaaatg 477

<210> 324
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 324
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 325
 caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttcttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tggtgcaaatt tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
ggagggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaata gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500

aactctggtg aggtcattct ggagtgcacat gatggactcc gcacagagct 550
tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
gttatattcc agtctaagcc agaaatccag tacgcaccac atttgagca 650
ggagcctaca aatttgagag aatcatctct aagcaaatg tcctatctgc 700
aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
aactcttgct ctctcgggtga tggatttgct ttggatttgt tgtgcaactg 850
ttgctacagc tgtggagcag tatgttccct ctgagaagct gagtatctat 900
ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950
ttctcttggt gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000
ctctacctac aaaagtgaat ctgtctcatt ctgaaattta agcatttttc 1050
ttttaaaaga caagtgtaat agacatctaa aattccactc ctcatagagc 1100
ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaatg 1150
caaataaagt tactcaaatc tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Pro | Lys | Gly | Ser | Leu | Trp | Val | Arg | Thr | Gln | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Pro | Pro | Leu | Leu | Leu | Leu | Thr | Met | Ala | Leu | Ala | Gly | Gly | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Gly | Thr | Ala | Ser | Ala | Glu | Ala | Phe | Asp | Ser | Val | Leu | Gly | Asp | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ala | Ser | Cys | His | Arg | Ala | Cys | Gln | Leu | Thr | Tyr | Pro | Leu | His | Thr |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Tyr | Pro | Lys | Glu | Glu | Glu | Leu | Tyr | Ala | Cys | Gln | Arg | Gly | Cys | Arg |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Leu | Phe | Ser | Ile | Cys | Gln | Phe | Val | Asp | Asp | Gly | Ile | Asp | Leu | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Arg | Thr | Lys | Leu | Glu | Cys | Glu | Ser | Ala | Cys | Thr | Glu | Ala | Tyr | Ser |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gln | Ser | Asp | Glu | Gln | Tyr | Ala | Cys | His | Leu | Gly | Cys | Gln | Asn | Gln |
| | | | 110 | | | | | | 115 | | | | | 120 |

Leu Pro Phe Ala Glu Leu Arg Gln Glu Gln Leu Met Ser Leu Met
125 130 135

Pro Lys Met His Leu Leu Phe Pro Leu Thr Leu Val Arg Ser Phe
140 145 150

Trp Ser Asp Met Met Asp Ser Ala Gln Ser Phe Ile Thr Ser Ser
155 160 165

Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys Ile Val Ile Phe
170 175 180

Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu Glu Gln Glu
185 190 195

Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser Tyr Leu
200 205 210

Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu Asp Gly
215 220 225

Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly Trp
230 235 240

Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp
245 250 255

Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro
260 265 270

Ser Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu
275 280 285

Gln Lys Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Val Arg
290 295 300

Ser Lys Thr Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys
305 310 315

Val Asn Leu Ala His Ser Glu Ile
320

<210> 331
<211> 350
<212> DNA
<213> Homo sapiens

<400> 331
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gcacacctac cctaaggaag aggagttgta cgcattgtcag agaggttgca 100
ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaattcga 150
actaaattgg aatgtgaatc tgcatgtaca gaagcatatt cccaattctga 200
tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250

aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
 ttctctctaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
 <211> 562
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 47
 <223> unknown base

<400> 332
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 aaacagcaac aagctgagct gctgtgacag aggggaacaag atggcggcgc 100
 cgaaggggagc ctttggggtga ggaccaact ggggctcccg ccgctgctgc 150
 tgctgaccat ggccttgaggc ggagggttcgg ggaccgcttc ggctgaagca 200
 tttgactcgg tcttggggtga taaggcgtct tgccaccggg cctgtcagtt 250
 gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
 agagagggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
 gacttaaatc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
 ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
 tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
 atgcacctac tctttcctct aactctgggtg aggtcattct ggagtgcacat 550
 gatggactcc gc 562

<210> 333
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 333
 acaagctgag ctgctgtgac ag 22

<210> 334
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 335
atggccttgg ccggagggtc ggggaccgct tcggctgaag 40

<210> 336
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 336
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cggcccggag gtggggcgcc gctggggcgg gcccgcacgg gcttcatctg 100
agggcgacag gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatgggccc cggtctggga ttcttgtttg 200
gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250
cccccgaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaacctat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
tctgagttag gaaacacaga aggtgttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
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agccacagac aattaaaaga cctttaaatc ctttggcttc tggtaaggg 850
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<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Ala | Ala | Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Cys | Thr | Cys | Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Leu | Phe | Pro | Arg | Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg |
| | | | 65 | | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Tyr | Tyr | Lys | Val | Asn | Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp | | 80 | 85 | 90 |
| Ile | Ser | Gln | Cys | Gly | Arg | Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln | | 95 | 100 | 105 |
| Ser | Asp | Glu | Val | Pro | Asp | Gly | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr | | 110 | 115 | 120 |
| Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile | Glu | Glu | Cys | Glu | Gln | Ala | Glu | | 125 | 130 | 135 |
| Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu | Ser | Glu | Glu | Thr | Gln | Lys | | 140 | 145 | 150 |
| Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp | Ser | Ser | Asp | Asn | Phe | | 155 | 160 | 165 |
| Cys | Glu | Ala | Asp | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val | Asp | | 170 | 175 | 180 |
| Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp | | 185 | 190 | 195 |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys | | 200 | 205 | 210 |
| Pro | Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln | | 215 | 220 | 225 |
| Gly | Thr | Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu | | 230 | 235 | 240 |
| Cys | Val | Glu | Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His | | 245 | 250 | 255 |
| Ala | Ser | Ile | Asn | Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu | | 260 | 265 | 270 |
| Thr | Trp | Leu | Glu | Lys | Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln | | 275 | 280 | 285 |
| Gln | Arg | Phe | Asp | Gly | Ile | Leu | Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg | | 290 | 295 | 300 |
| Leu | Lys | Asn | Leu | Tyr | Phe | Leu | Tyr | Leu | Ile | Glu | Leu | Arg | Ala | Leu | | 305 | 310 | 315 |
| Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg | Pro | Asp | Phe | Gln | Leu | Phe | | 320 | 325 | 330 |
| Thr | Gly | Asn | Lys | Ile | Gln | Asp | Glu | Glu | Asn | Lys | Met | Leu | Leu | Leu | | 335 | 340 | 345 |
| Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu | His | Phe | Asp | Glu | | 350 | 355 | 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys | | | | |

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<212> DNA
<213> Homo sapiens

<400> 345
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cactcacctg ttcttgcccc tgggtttcct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
gaatttggat acagtgtctt acaacatgtt ggggggtggac agcgatggat 300
gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
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aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900
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 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
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<210> 346

<211> 124

<212> PRT

<213> Homo sapiens

<400> 346

| | | | | | | | | | | | | | | |
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| Met | Glu | Leu | Pro | Phe | Val | Thr | His | Leu | Phe | Leu | Pro | Leu | Val | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Thr | Gly | Leu | Cys | Ser | Pro | Phe | Asn | Leu | Asp | Glu | His | His | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Leu | Phe | Pro | Gly | Pro | Pro | Glu | Ala | Glu | Phe | Gly | Tyr | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Gln | His | Val | Gly | Gly | Gly | Gln | Arg | Trp | Met | Leu | Val | Gly | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Trp | Asp | Gly | Pro | Ser | Gly | Asp | Arg | Arg | Gly | Asp | Val | Tyr | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Pro | Val | Gly | Gly | Ala | His | Asn | Ala | Pro | Cys | Ala | Lys | Gly | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Gly | Asp | Tyr | Gln | Leu | Gly | Asn | Ser | Ser | His | Pro | Ala | Val | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Met | His | Leu | Gly | Met | Ser | Leu | Leu | Glu | Thr | Asp | Gly | Asp | Gly | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Phe | Met | Val | Ser | | | | | | | | | | | |

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<211> 509

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 22

<223> unknown base

<400> 347

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 ggcattggaac tccccttctg cactcacctg ttcttgcccc tgggtgttcct 200
 gacagggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250
 tcccagggcc accagaagct gaatttggat acagtgtctt acaacatgtt 300
 ggggggtggac agcgatggat gctgggtggg gccccctggg atgggccttc 350
 aggcgaccgg aggggggacg tttatcgctg ccctgtaggg gggggccaca 400
 atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
 totcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
 tggatgatgg 509

<210> 348

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 348

agggacagag gccagaggac ttc 23

<210> 349

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 349

caggtgcata ttcacagcag gatg 24

<210> 350

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 350

ggaactcccc ttctgactc acctgttctt gccccctgtg ttcct 45

<210> 351

<211> 2056

<212> DNA

<213> Homo sapiens

<400> 351

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<210> 352

<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

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| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Glu | Val | Ala | Ile | Leu | Pro | Ala | Pro | Gln | Asn | Leu | Ser | Val | Leu | Ser |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Thr | Asn | Met | Lys | His | Leu | Leu | Met | Trp | Ser | Pro | Val | Ile | Ala | Pro |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Gly | Glu | Thr | Val | Tyr | Tyr | Ser | Val | Glu | Tyr | Gln | Gly | Glu | Tyr | Glu |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Ser | Leu | Tyr | Thr | Ser | His | Ile | Trp | Ile | Pro | Ser | Ser | Trp | Cys | Ser |
| | | | 80 | | | | | 85 | | | | | | 90 |
| Leu | Thr | Glu | Gly | Pro | Glu | Cys | Asp | Val | Thr | Asp | Asp | Ile | Thr | Ala |
| | | | 95 | | | | | 100 | | | | | | 105 |
| Thr | Val | Pro | Tyr | Asn | Leu | Arg | Val | Arg | Ala | Thr | Leu | Gly | Ser | Gln |
| | | | 110 | | | | | 115 | | | | | | 120 |

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<210> 354

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 354

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<210> 355

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 355

ccaggtcggg taaggatggt tgag 24

<210> 356

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 357
 <211> 1670
 <212> DNA
 <213> Homo sapiens

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<210> 358

<211> 328

<212> PRT

<213> Homo sapiens

<400> 358

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ala | Arg | Leu | Ser | Ala | Pro | Arg | Ala | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Ala | Ala | Leu | Gly | Ala | Ala | Ala | His | Ile | Gly | Pro | Ala | Pro | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Glu | Asp | Trp | Trp | Ser | Tyr | Lys | Asp | Asn | Leu | Gln | Gly | Asn | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Pro | Gly | Pro | Pro | Phe | Trp | Gly | Leu | Val | Asn | Ala | Ala | Trp | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Cys | Ala | Val | Gly | Lys | Arg | Gln | Ser | Pro | Val | Asp | Val | Glu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Arg | Val | Leu | Tyr | Asp | Pro | Phe | Leu | Pro | Pro | Leu | Arg | Leu | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Gly | Gly | Glu | Lys | Leu | Arg | Gly | Thr | Leu | Tyr | Asn | Thr | Gly | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| His | Val | Ser | Phe | Leu | Pro | Ala | Pro | Arg | Pro | Val | Val | Asn | Val | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Gly | Pro | Leu | Leu | Tyr | Ser | His | Arg | Leu | Ser | Glu | Leu | Arg | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Phe | Gly | Ala | Arg | Asp | Gly | Ala | Gly | Ser | Glu | His | Gln | Ile | Asn |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Gln | Gly | Phe | Ser | Ala | Glu | Val | Gln | Leu | Ile | His | Phe | Asn | Gln |
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<220>
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<213> Homo sapiens

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<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

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| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp |
| | | | | 95 | | | | 100 | | | | | | 105 |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu |
| | | | | 110 | | | | 115 | | | | | | 120 |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln |
| | | | | 125 | | | | 130 | | | | | | 135 |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His |
| | | | | 140 | | | | 145 | | | | | | 150 |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys |
| | | | | 155 | | | | 160 | | | | | | 165 |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly |

Val Asp Lys Arg Lys Thr Tyr Ile Ala Ser Phe Gln Asn Gly Ile
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Phe Ser Glu Ser Leu Gln Asn Pro Pro Gly Gly Lys Ala Phe Arg
485 490 495

Val Phe Ala Val Val
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<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 364

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<211> 20

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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ccaagagtat actgtcctcg 20

<210> 366

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 366

agcacagatt ttctctacag ccccc 25

<210> 367

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<220>

<223> Synthetic oligonucleotide probe

<400> 367

aaccactcca gcatgtactg ctgc 24

<210> 368

<211> 50

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<213> Homo sapiens

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<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

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Arg Val Asp Gly Ser Lys Cys Lys Cys Ser Arg Lys Gly Pro Lys
          35             40             45
Ile Arg Tyr Ser Asp Val Lys Lys Leu Glu Met Lys Pro Lys Tyr
          50             55             60
Pro His Cys Glu Glu Lys Met Val Ile Ile Thr Thr Lys Ser Val
          65             70             75
Ser Arg Tyr Arg Gly Gln Glu His Cys Leu His Pro Lys Leu Gln
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Arg Arg Val Tyr Glu Glu
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<211> 22

<212> DNA

<213> Artificial Sequence

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| | | | | 50 | | | | | | 55 | | | | | 60 |
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ser | Asn | Asp | Arg | Gly | Glu | Asp | Glu | Asp | Ile | His | Asp | Gln | Asn | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Lys | Pro | Val | Met | Val | Tyr | Ile | His | Gly | Gly | Ser | Tyr | Met | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Thr | Gly | Asn | Met | Ile | Asp | Gly | Ser | Ile | Leu | Ala | Ser | Tyr | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asn | Val | Ile | Val | Ile | Thr | Ile | Asn | Tyr | Arg | Leu | Gly | Ile | Leu | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Leu | Ser | Thr | Gly | Asp | Gln | Ala | Ala | Lys | Gly | Asn | Tyr | Gly | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Asp | Gln | Ile | Gln | Ala | Leu | Arg | Trp | Ile | Glu | Glu | Asn | Val | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Phe | Gly | Gly | Asp | Pro | Lys | Arg | Val | Thr | Ile | Phe | Gly | Ser | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Gly | Ala | Ser | Cys | Val | Ser | Leu | Leu | Thr | Leu | Ser | His | Tyr | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Gly | Leu | Phe | Gln | Lys | Ala | Ile | Ile | Gln | Ser | Gly | Thr | Ala | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Ser | Trp | Ala | Val | Asn | Tyr | Gln | Pro | Ala | Lys | Tyr | Thr | Arg | Ile | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Ala | Asp | Lys | Val | Gly | Cys | Asn | Met | Leu | Asp | Thr | Thr | Asp | Met | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Glu | Cys | Leu | Arg | Asn | Lys | Asn | Tyr | Lys | Glu | Leu | Ile | Gln | Gln | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Thr | Ile | Thr | Pro | Ala | Thr | Tyr | His | Ile | Ala | Phe | Gly | Pro | Val | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |

| | | |
|-------------------------------------|-------------------------|-----|
| 635 | 640 | 645 |
| Asn Pro Lys His Ser Lys Asp Pro His | Lys Thr Gly Pro Glu Asp | |
| 650 | 655 | 660 |
| Thr Thr Val Leu Ile Glu Thr Lys Arg | Asp Tyr Ser Thr Glu Leu | |
| 665 | 670 | 675 |
| Ser Val Thr Ile Ala Val Gly Ala Ser | Leu Leu Phe Leu Asn Ile | |
| 680 | 685 | 690 |
| Leu Ala Phe Ala Ala Leu Tyr Tyr Lys | Lys Asp Lys Arg Arg His | |
| 695 | 700 | 705 |
| Glu Thr His Arg Arg Pro Ser Pro Gln | Arg Asn Thr Thr Asn Asp | |
| 710 | 715 | 720 |
| Ile Ala His Ile Gln Asn Glu Glu Ile | Met Ser Leu Gln Met Lys | |
| 725 | 730 | 735 |
| Gln Leu Glu His Asp His Glu Cys Glu | Ser Leu Gln Ala His Asp | |
| 740 | 745 | 750 |
| Thr Leu Arg Leu Thr Cys Pro Pro Asp | Tyr Thr Leu Thr Leu Arg | |
| 755 | 760 | 765 |
| Arg Ser Pro Asp Asp Ile Pro Leu Met | Thr Pro Asn Thr Ile Thr | |
| 770 | 775 | 780 |
| Met Ile Pro Asn Thr Leu Thr Gly Met | Gln Pro Leu His Thr Phe | |
| 785 | 790 | 795 |
| Asn Thr Phe Ser Gly Gly Gln Asn Ser | Thr Asn Leu Pro His Gly | |
| 800 | 805 | 810 |
| His Ser Thr Thr Arg Val | | |
| 815 | | |

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 <223> Synthetic oligonucleotide probe

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 <211> 25
 <212> DNA
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<210> 378

<211> 47

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 379

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accagttata tccgccttac ccagatatg caaagtaaac aggggtgcctt 300

gtggaaccgg gtgccatgtt tcctgagaga ctgggagttg cagggtgcact 350

tcaaaatcca tggacaagga aagaagaatc tgcattgggga tggcttggca 400

atctggtaca caaaggatcg gatgcagcca gggcctgtgt ttggaaacat 450

ggacaaattt gtggggctgg gagtatttgt agacacctac cccaatgagg 500

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gctgcctgag atgacagctc cactgccgcc cctgagtggc ctggccctct 950

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<210> 380

<211> 348

<212> PRT

<213> Homo sapiens

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| | | | | | | | | | | | | | | |
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| Arg | Cys | Leu | Ser | Ala | Arg | Asp | Gly | Ser | Arg | Met | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Gly | Ser | Gly | Gln | Gly | Pro | Gln | Gln | Val | Gly | Ala | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Thr | Phe | Glu | Tyr | Leu | Lys | Arg | Glu | His | Ser | Leu | Ser | Lys | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Gln | Gly | Val | Gly | Thr | Gly | Ser | Ser | Ser | Leu | Trp | Asn | Leu | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gly | Asn | Ala | Met | Val | Met | Thr | Gln | Tyr | Ile | Arg | Leu | Thr | Pro | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Gln | Ser | Lys | Gln | Gly | Ala | Leu | Trp | Asn | Arg | Val | Pro | Cys | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Arg | Asp | Trp | Glu | Leu | Gln | Val | His | Phe | Lys | Ile | His | Gly | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Lys | Lys | Asn | Leu | His | Gly | Asp | Gly | Leu | Ala | Ile | Trp | Tyr | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Asp | Arg | Met | Gln | Pro | Gly | Pro | Val | Phe | Gly | Asn | Met | Asp | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Val | Gly | Leu | Gly | Val | Phe | Val | Asp | Thr | Tyr | Pro | Asn | Glu | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Gln | Gln | Glu | Arg | Val | Phe | Pro | Tyr | Ile | Ser | Ala | Met | Val | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Gly | Ser | Leu | Ser | Tyr | Asp | His | Glu | Arg | Asp | Gly | Arg | Pro | Thr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Leu | Gly | Gly | Cys | Thr | Ala | Ile | Val | Arg | Asn | Leu | His | Tyr | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Phe | Leu | Val | Ile | Arg | Tyr | Val | Lys | Arg | His | Leu | Thr | Ile | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Met | Asp | Ile | Asp | Gly | Lys | His | Glu | Trp | Arg | Asp | Cys | Ile | Glu | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Gly | Val | Arg | Leu | Pro | Arg | Gly | Tyr | Tyr | Phe | Gly | Thr | Ser | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Thr | Gly | Asp | Leu | Ser | Asp | Asn | His | Asp | Val | Ile | Ser | Leu | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Phe | Glu | Leu | Thr | Val | Glu | Arg | Thr | Pro | Glu | Glu | Glu | Lys | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Arg | Asp | Val | Phe | Leu | Pro | Ser | Val | Asp | Asn | Met | Lys | Leu | Pro |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Met | Thr | Ala | Pro | Leu | Pro | Pro | Leu | Ser | Gly | Leu | Ala | Leu | Phe |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Leu | Ile | Val | Phe | Phe | Ser | Leu | Val | Phe | Ser | Val | Phe | Ala | Ile | Val |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ile | Gly | Ile | Ile | Leu | Tyr | Asn | Lys | Trp | Gln | Glu | Gln | Ser | Arg | Lys |
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Arg Phe Tyr

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<210> 382

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 382

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<210> 383

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 383

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<210> 384

<211> 3150

<212> DNA

<213> Homo sapiens

<400> 384

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<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

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| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala | 1 | 5 | 10 | 15 |
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile | 20 | 25 | 30 | |
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys | 35 | 40 | 45 | |
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro | 50 | 55 | 60 | |
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu | 65 | 70 | 75 | |
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser | 80 | 85 | 90 | |
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val | 95 | 100 | 105 | |
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala | 110 | 115 | 120 | |
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His | 125 | 130 | 135 | |
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser | 140 | 145 | 150 | |
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu | 155 | 160 | 165 | |
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu | 170 | 175 | 180 | |
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp | 185 | 190 | 195 | |
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Gln | Ser | Gly | Leu | Ala | Leu | Leu | Tyr | Gly | Phe | Leu | Pro | Asp | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Trp | Lys | Lys | Ile | Tyr | Phe | Arg | His | Gln | Pro | Ser | Ala | Leu | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Ser | Gly | Ser | Cys | Tyr | Cys | Pro | Val | Arg | Asn | Gln | Tyr | Leu | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Glu | Gln | Arg | Arg | Gln | Tyr | Leu | Leu | Arg | Leu | Lys | Asn | Ser | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Glu | Lys | Thr | Tyr | Gly | Glu | Met | Ala | Lys | Ile | Val | Asp | Val | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Lys | Gln | Leu | Arg | Ala | Ala | Asn | Pro | Ile | Asp | Ser | Met | Leu | Cys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Phe | Cys | His | Asn | Val | Ser | Phe | Pro | Cys | Thr | Arg | Asn | Gly | Cys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Asp | Met | Glu | His | Phe | Lys | Val | Ile | Lys | Thr | His | Gln | Ile | Glu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Glu | Arg | Glu | Arg | Arg | Glu | Lys | Lys | Leu | Tyr | Phe | Gly | Tyr | Ser | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Leu | Leu | Gly | Ala | His | Pro | Ile | Leu | Asn | Gln | Thr | Ile | Gly | Arg | Met | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Arg | Ala | Thr | Glu | Gly | Arg | Lys | Glu | Glu | Leu | Phe | Ala | Leu | Tyr | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Ala | His | Asp | Val | Thr | Leu | Ser | Pro | Val | Leu | Ser | Ala | Leu | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Ser | Glu | Ala | Arg | Phe | Pro | Arg | Phe | Ala | Ala | Arg | Leu | Ile | Phe | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Glu | Leu | Trp | Gln | Asp | Arg | Glu | Lys | Pro | Ser | Glu | His | Ser | Val | Arg | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Ile | Leu | Tyr | Asn | Gly | Val | Asp | Val | Thr | Phe | His | Thr | Ser | Phe | Cys | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Gln | Asp | His | His | Lys | Arg | Ser | Pro | Lys | Pro | Met | Cys | Pro | Leu | Glu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Asn | Leu | Val | Arg | Phe | Val | Lys | Arg | Asp | Met | Phe | Val | Ala | Leu | Gly | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Gly | Ser | Gly | Thr | Asn | Tyr | Tyr | Asp | Ala | Cys | His | Arg | Glu | Gly | Phe | |
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<210> 388
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<400> 388
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<212> DNA
<213> Homo sapiens

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 <211> 916
 <212> PRT
 <213> Homo sapiens
 <400> 390

| | | | | | |
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| Ile Ser Thr Ile | Gly 305 | Glu Leu Asp His | Glu 310 | Glu Ser Gly Phe | Tyr 315 |
| Gln Met Glu Val | Gln 320 | Ala Met Asp Asn | Ala 325 | Gly Tyr Ser Ala | Arg 330 |
| Ala Lys Val Leu | Ile 335 | Thr Val Leu Asp | Val 340 | Asn Asp Asn Ala | Pro 345 |
| Glu Val Val Leu | Thr 350 | Ser Leu Ala Ser | Ser 355 | Val Pro Glu Asn | Ser 360 |
| Pro Arg Gly Thr | Leu 365 | Ile Ala Leu Leu | Asn 370 | Val Asn Asp Gln | Asp 375 |
| Ser Glu Glu Asn | Gly 380 | Gln Val Ile Cys | Phe 385 | Ile Gln Gly Asn | Leu 390 |
| Pro Phe Lys Leu | Glu 395 | Lys Ser Tyr Gly | Asn 400 | Tyr Tyr Ser Leu | Val 405 |
| Thr Asp Ile Val | Leu 410 | Asp Arg Glu Gln | Val 415 | Pro Ser Tyr Asn | Ile 420 |
| Thr Val Thr Ala | Thr 425 | Asp Arg Gly Thr | Pro 430 | Pro Leu Ser Thr | Glu 435 |
| Thr His Ile Ser | Leu 440 | Asn Val Ala Asp | Thr 445 | Asn Asp Asn Pro | Pro 450 |
| Val Phe Pro Gln | Ala 455 | Ser Tyr Ser Ala | Tyr 460 | Ile Pro Glu Asn | Asn 465 |
| Pro Arg Gly Val | Ser 470 | Leu Val Ser Val | Thr 475 | Ala His Asp Pro | Asp 480 |
| Cys Glu Glu Asn | Ala 485 | Gln Ile Thr Tyr | Ser 490 | Leu Ala Glu Asn | Thr 495 |
| Ile Gln Gly Ala | Ser 500 | Leu Ser Ser Tyr | Val 505 | Ser Ile Asn Ser | Asp 510 |
| Thr Gly Val Leu | Tyr 515 | Ala Leu Ser Ser | Phe 520 | Asp Tyr Glu Gln | Phe 525 |
| Arg Asp Leu Gln | Val 530 | Lys Val Met Ala | Arg 535 | Asp Asn Gly His | Pro 540 |
| Pro Leu Ser Ser | Asn 545 | Val Ser Leu Ser | Leu 550 | Phe Val Leu Asp | Gln 555 |
| Asn Asp Asn Ala | Pro 560 | Glu Ile Leu Tyr | Pro 565 | Ala Leu Pro Thr | Asp 570 |
| Gly Ser Thr Gly | Val 575 | Glu Leu Ala Pro | Arg 580 | Ser Ala Glu Pro | Gly 585 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 875 | | 880 | | 885 |
| Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp | | | | | |
| | 890 | | 895 | | 900 |
| Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro | | | | | |
| | 905 | | 910 | | 915 |

Ala

<210> 391

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

tccgtctctg tgaaccgccc cac 23

<210> 392

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 392

ctcgggcgca ttgtcgttct ggtc 24

<210> 393

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

ccgactgtga aagagaacgc cccagatcca cttgttcccc 40

<210> 394

<211> 999

<212> DNA

<213> Homo sapiens

<400> 394

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ggggcctcct ccaactgggtc cgaatcagta ggtgaccccg cccctggatt 150

ctggaagacc tcaccatggg acgccccga cctcgtgcgg ccaagacgtg 200

gatgttctctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac 250
 aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300
 tggcaggcgg ccttggtcca gggccagcaa ctactctgtg gcggtgtcct 350
 tgtaggtggc aactgggtcc ttacagctgc ccactgtaaa aaaccgaaat 400
 acacagtaacg cctgggagac cacagcctac agaataaaga tggcccagag 450
 caagaaatac ctgtggttca gtccatccca caccctgtct acaacagcag 500
 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550
 aggcatccct ggggtccaaa gtgaagccca tcagcctggc agatcattgc 600
 acccagcctg gccagaagtg caccgtctca ggctggggca ctgtcaccag 650
 tccccgagag aattttctctg acactctcaa ctgtgcagaa gtaaaaaatct 700
 ttccccagaa gaagtgtgag gatgcttacc cggggcagat cacagatggc 750
 atgggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800
 tggaggcccc ctggtgtgtg atgggtgact ccagggcatt acatcctggg 850
 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900
 tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950
 ctaggataag cactagatct cccctaataa actcacaact ctctggttc 999

<210> 395
 <211> 260
 <212> PRT
 <213> Homo sapiens

<400> 395
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 Leu Leu Leu Gly Gly Ala Trp Ala Gly His Ser Arg Ala Gln Glu
 20 25 30
 Asp Lys Val Leu Gly Gly His Glu Cys Gln Pro His Ser Gln Pro
 35 40 45
 Trp Gln Ala Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly
 50 55 60
 Val Leu Val Gly Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys
 65 70 75
 Lys Pro Lys Tyr Thr Val Arg Leu Gly Asp His Ser Leu Gln Asn
 80 85 90
 Lys Asp Gly Pro Glu Gln Glu Ile Pro Val Val Gln Ser Ile Pro
 95 100 105

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | |

<210> 396
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 396
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<210> 397
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 397
 ggtgcaatga tctgccaggc tgat 24

<210> 398
 <211> 48
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaataacct gtggttcagt ccattccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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 cgccgcgagg ccccgccccg gcccgcccc gcccgcccc ggccggcggg 200
 ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250
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 ggggagcggg cgcccccccc gaaacgactt tcagtccccg acgcgccccg 500
 cccaaccct acgatgaaga gggcgccgc tggagggagc cggctgctgg 550
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 gcctgcgtat gctacaatga gccaagggtg acgacaagct gccccagca 650
 gggcctgcag gctgtgcccg tgggcatccc tgctgccagc cagcgcatct 700
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 tgccgcaacc tcaccatcct gtggctgcac tcgaatgtgc tggcccgaat 800
 tgatgcggct gccttcaact gcctggccct cctggagcag ctggacctca 850
 gcgataatgc acagctccgg tctgtggacc ctgccacatt ccacggcctg 900
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 acaacgcgct gcaggcactg cctgatgaca cttccgcga cctgggcaac 1050
 ctcacacacc tcttcctgca cggcaaccgc atctccagcg tgcccagcg 1100

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Trp | Ala | Trp | Leu | Gln | Lys | Phe | Arg | Gly | Ser | Ser | Ser | Glu | Val | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Cys | Ser | Leu | Pro | Gln | Arg | Leu | Ala | Gly | Arg | Asp | Leu | Lys | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Ala | Ala | Asn | Asp | Leu | Gln | Gly | Cys | Ala | Val | Ala | Thr | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Tyr | His | Pro | Ile | Trp | Thr | Gly | Arg | Ala | Thr | Asp | Glu | Glu | Pro | Leu | |

| | | | | | |
|-------------------------------------|-------------------------|--|-----|--|-----|
| | 320 | | 325 | | 330 |
| Gly Leu Pro Lys Cys Cys Gln Pro Asp | Ala Ala Asp Lys Ala Ser | | | | |
| 335 | 340 | | | | 345 |
| Val Leu Glu Pro Gly Arg Pro Ala Ser | Ala Gly Asn Ala Leu Lys | | | | |
| 350 | 355 | | | | 360 |
| Gly Arg Val Pro Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser Gly | | | | |
| 365 | 370 | | | | 375 |
| Pro Arg His Ile Asn Asp Ser Pro Phe | Gly Thr Leu Pro Gly Ser | | | | |
| 380 | 385 | | | | 390 |
| Ala Glu Pro Pro Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu Pro | | | | |
| 395 | 400 | | | | 405 |
| Pro Gly Phe Pro Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys Ser | | | | |
| 410 | 415 | | | | 420 |
| Arg Lys Asn Arg Thr Arg Ser His Cys | Arg Leu Gly Gln Ala Gly | | | | |
| 425 | 430 | | | | 435 |
| Ser Gly Gly Gly Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala Leu | | | | |
| 440 | 445 | | | | 450 |
| Pro Ser Leu Thr Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu Val | | | | |
| 455 | 460 | | | | 465 |
| Leu Trp Thr Val Leu Gly Pro Cys | | | | | |
| 470 | | | | | |

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 402
 <211> 24
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<220>
 <223> Synthetic oligonucleotide probe

<400> 402
 ccctgcaggt cattggcagc tagg 24

<210> 403
 <211> 45
 <212> DNA
 <213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe

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aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45

<210> 404
<211> 2738
<212> DNA
<213> Homo sapiens

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agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150
agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgca 200
caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250
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cctttgtcac caatttagca aaggacctgg gtctggagca gaggaattc 350
tccaggcggg gggttagggt tgtttccaga ggaacaaac tacatttgca 400
gctcaatcag gagaccgcg atttgttgct aaatgagaaa ttggaccgtg 450
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ctagagagtc ccttcgagtt ttttcaagct gagctgcaag taatagacat 550
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ctattttcgg gtccctaccc gcaaacgcag tgatggcagg aaatacccag 750
agctggtgct ggacaaagcg ctggaccgag aggaagaagc tgagctcagg 800
ttaacactca cagcactgga tgggtggctct ccgccagat ctggcactgc 850
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agatcaatcc cttgacagga gaaattgaac taaaaaaca actcgatttc 1100
gaaaaacttc agtcctatga agtcaatatt gaggcaagag atgctggaac 1150
    
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attttgtggc atttccatgc caatgtttat ttcccccaat ttgtgtgtat 2650
gtaatatgtg acggattttac tcttgatttt tctcatgttc tttctccctt 2700
tgtttttaaag tgaacattta cctttattcc tggttctt 2738

<210> 405

<211> 798

<212> PRT

<213> Homo sapiens

<400> 405

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu | 1 | 5 | 10 | 15 |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu | 20 | 25 | 30 | |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe | 35 | 40 | 45 | |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe | 50 | 55 | 60 | |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His | 65 | 70 | 75 | |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys | 80 | 85 | 90 | |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu | 95 | 100 | 105 | |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala | 110 | 115 | 120 | |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu | 125 | 130 | 135 | |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly | 140 | 145 | 150 | |
| Thr | Thr | Phe | Pro | Leu | Lys | Asn | Ala | Glu | Asp | Leu | Asp | Val | Gly | Gln | 155 | 160 | 165 | |
| Asn | Asn | Ile | Glu | Asn | Tyr | Ile | Ile | Ser | Pro | Asn | Ser | Tyr | Phe | Arg | 170 | 175 | 180 | |
| Val | Leu | Thr | Arg | Lys | Arg | Ser | Asp | Gly | Arg | Lys | Tyr | Pro | Glu | Leu | 185 | 190 | 195 | |
| Val | Leu | Asp | Lys | Ala | Leu | Asp | Arg | Glu | Glu | Glu | Ala | Glu | Leu | Arg | 200 | 205 | 210 | |
| Leu | Thr | Leu | Thr | Ala | Leu | Asp | Gly | Gly | Ser | Pro | Pro | Arg | Ser | Gly | 215 | 220 | 225 | |
| Thr | Ala | Gln | Val | Tyr | Ile | Glu | Val | Leu | Asp | Val | Asn | Asp | Asn | Ala | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 230 | 235 | 240 |
| Pro Glu Phe Glu Gln Pro Phe Tyr Arg | Val Gln Ile Ser Glu Asp | |
| 245 | 250 | 255 |
| Ser Pro Val Gly Phe Leu Val Val Lys | Val Ser Ala Thr Asp Val | |
| 260 | 265 | 270 |
| Asp Thr Gly Val Asn Gly Glu Ile Ser | Tyr Ser Leu Phe Gln Ala | |
| 275 | 280 | 285 |
| Ser Glu Glu Ile Gly Lys Thr Phe Lys | Ile Asn Pro Leu Thr Gly | |
| 290 | 295 | 300 |
| Glu Ile Glu Leu Lys Lys Gln Leu Asp | Phe Glu Lys Leu Gln Ser | |
| 305 | 310 | 315 |
| Tyr Glu Val Asn Ile Glu Ala Arg Asp | Ala Gly Thr Phe Ser Gly | |
| 320 | 325 | 330 |
| Lys Cys Thr Val Leu Ile Gln Val Ile | Asp Val Asn Asp His Ala | |
| 335 | 340 | 345 |
| Pro Glu Val Thr Met Ser Ala Phe Thr | Ser Pro Ile Pro Glu Asn | |
| 350 | 355 | 360 |
| Ala Pro Glu Thr Val Val Ala Leu Phe | Ser Val Ser Asp Leu Asp | |
| 365 | 370 | 375 |
| Ser Gly Glu Asn Gly Lys Ile Ser Cys | Ser Ile Gln Glu Asp Leu | |
| 380 | 385 | 390 |
| Pro Phe Leu Leu Lys Ser Ala Glu Asn | Phe Tyr Thr Leu Leu Thr | |
| 395 | 400 | 405 |
| Glu Arg Pro Leu Asp Arg Glu Ser Arg | Ala Glu Tyr Asn Ile Thr | |
| 410 | 415 | 420 |
| Ile Thr Val Thr Asp Leu Gly Thr Pro | Met Leu Ile Thr Gln Leu | |
| 425 | 430 | 435 |
| Asn Met Thr Val Leu Ile Ala Asp Val | Asn Asp Asn Ala Pro Ala | |
| 440 | 445 | 450 |
| Phe Thr Gln Thr Ser Tyr Thr Leu Phe | Val Arg Glu Asn Asn Ser | |
| 455 | 460 | 465 |
| Pro Ala Leu His Ile Arg Ser Val Ser | Ala Thr Asp Arg Asp Ser | |
| 470 | 475 | 480 |
| Gly Thr Asn Ala Gln Val Thr Tyr Ser | Leu Leu Pro Pro Gln Asp | |
| 485 | 490 | 495 |
| Pro His Leu Pro Leu Thr Ser Leu Val | Ser Ile Asn Ala Asp Asn | |
| 500 | 505 | 510 |
| Gly His Leu Phe Ala Leu Arg Ser Leu | Asp Tyr Glu Ala Leu Gln | |
| 515 | 520 | 525 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Phe | Gln | Phe | Arg | Val | Gly | Ala | Ser | Asp | His | Gly | Ser | Pro | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Leu | Ser | Ser | Glu | Ala | Leu | Val | Arg | Val | Val | Val | Leu | Asp | Ala | Asn | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Asp | Asn | Ser | Pro | Phe | Val | Leu | Tyr | Pro | Leu | Gln | Asn | Gly | Ser | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Pro | Cys | Thr | Glu | Leu | Val | Pro | Arg | Ala | Ala | Glu | Pro | Gly | Tyr | Leu | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Val | Thr | Lys | Val | Val | Ala | Val | Asp | Gly | Asp | Ser | Gly | Gln | Asn | Ala | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Trp | Leu | Ser | Tyr | Gln | Leu | Leu | Lys | Ala | Thr | Glu | Leu | Gly | Leu | Phe | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Gly | Val | Trp | Ala | His | Asn | Gly | Glu | Val | Arg | Thr | Ala | Arg | Leu | Leu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ser | Glu | Arg | Asp | Ala | Ala | Lys | His | Arg | Leu | Val | Val | Leu | Val | Lys | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asp | Asn | Gly | Glu | Pro | Pro | Arg | Ser | Ala | Thr | Ala | Thr | Leu | His | Val | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Leu | Leu | Val | Asp | Gly | Phe | Ser | Gln | Pro | Tyr | Leu | Pro | Leu | Pro | Glu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Ala | Pro | Thr | Gln | Ala | Gln | Ala | Asp | Leu | Leu | Thr | Val | Tyr | Leu | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Val | Val | Ala | Leu | Ala | Ser | Val | Ser | Ser | Leu | Phe | Leu | Phe | Ser | Val | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Leu | Leu | Phe | Val | Ala | Val | Arg | Leu | Cys | Arg | Arg | Ser | Arg | Ala | Ala | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Val | Gly | Arg | Cys | Leu | Val | Pro | Glu | Gly | Pro | Leu | Pro | Gly | His | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Val | Asp | Met | Ser | Gly | Thr | Arg | Thr | Leu | Ser | Gln | Ser | Tyr | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Tyr | Glu | Val | Cys | Leu | Ala | Gly | Gly | Ser | Gly | Thr | Asn | Glu | Phe | Lys | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Phe | Leu | Lys | Pro | Ile | Ile | Pro | Asn | Phe | Pro | Pro | Gln | Cys | Pro | Gly | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Lys | Glu | Ile | Gln | Gly | Asn | Ser | Thr | Phe | Pro | Asn | Asn | Phe | Gly | Phe | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Asn | Ile | Gln | | | | | | | | | | | | | |

<210> 406

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 406
ctgagaacgc gctgaaact gtg 23

<210> 407
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 407
agcgttgtca ttgacatcgg cg 22

<210> 408
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 408
ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409
<211> 1379
<212> DNA
<213> Homo sapiens

<400> 409
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cggtcgacga ccgccccgcg tcatgcggct cctcggctgg tggcaagtat 150
tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200
agtggtcgct tatggtcaga ggagcagcct gtcaccctc tccaggtggg 250
ggctgtgtac ctgggtgagg aggagtcct gcatgaccgc atgggccagg 300
acagggcagc agaagaggcc aatgcggtgc tggggctgga caccgaaggc 350
gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400
gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450
caaggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500

cacttccctg acagagaaga ggagtattac acagagccag aagtggcgga 550
atctgacgca gccccgacag aggactccaa taacactgaa agtctgaaat 600
ccccaaaggt gaactgtgag gagagaaaca ttacaggatt agaaaatttc 650
actctgaaaa ttttaaataat gtcacaggac cttatggatt ttctgaaccc 700
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gctcttcact ttttggcact ggatgcatct cagcacagca gcctttctac 850
caggtttggc accgtagctg ttcttaatat tttattattt caaggagcta 900
aaccaatggc cagatttaat catacagatc gaacactgga aacactgaaa 950
atcttcattt ttaatcagac aggtatagaa gccaagaaga atgtggtggt 1000
aactcaagcc gaccaaatag gccctcttcc cagcactttg ataaaaagtg 1050
tggactgggt gcttgtattt tccttattct ttttaattag ttttattatg 1100
tatgctacca ttcgaactga gagtattcgg tggctaattc caggacaaga 1150
gcaggaacat gtggagtagt gatggtctga aagaagttgg aaagaggaac 1200
ttcaatcctt cgtttcagaa attagtgcta cagtttcata cattttctcc 1250
agtgcgtgt tgacttgaaa cttcaggcag attaaaagaa tcatttggtg 1300
aacaactgaa tgtataaaaa aattataaac tgggtgttta actagtattg 1350
caataagcaa atgcaaaaat attcaatag 1379

<210> 410
<211> 360
<212> PRT
<213> Homo sapiens

<400> 410
Met Val Pro Ala Ala Gly Arg Arg Pro Pro Arg Val Met Arg Leu
1 5 10 15
Leu Gly Trp Trp Gln Val Leu Leu Trp Val Leu Gly Leu Pro Val
20 25 30
Arg Gly Val Glu Val Ala Glu Glu Ser Gly Arg Leu Trp Ser Glu
35 40 45
Glu Gln Pro Ala His Pro Leu Gln Val Gly Ala Val Tyr Leu Gly
50 55 60
Glu Glu Glu Leu Leu His Asp Pro Met Gly Gln Asp Arg Ala Ala
65 70 75
Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 411
cacagagcca gaagtggcgg aatc 24

<210> 412
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 412
ccacatgttc ctgctcttgc cctgg 25

<210> 413
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 413
cggtagtgac tgtactctag tcctgtttta caccctgtgg tgccg 45

<210> 414
<211> 1196
<212> DNA
<213> Homo sapiens

<400> 414
cccggctccg ctccctctgc cccctcgggg tcgcgcgccc acgatgctgc 50
agggccctgg ctgcgtctgc ctgctcttcc tcgcctcgca ctgctgcctg 100
ggctcggcgc gcgggctctt cctctttggc cagcccagact tctcctacaa 150
gcgcagcaat tgcaagccca tcccggtcaa cctgcagctg tgccacggca 200
tcgaatacca gaacatgcgg ctgcccacc tgctgggcca cgagaccatg 250
aaggaggtgc tggagcaggc cggcgcttgg atcccgtgg tcatgaagca 300
gtgccacccg gacaccaaga agttcctgtg ctgcgtcttc gccccgtct 350
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caggtgaagg accgctgcgc cccggtcatg tccgccttcg gcttcccctg 450
gcccgcacatg cttgagtgcg accgtttccc ccaggacaac gacctttgca 500
tccccctcgc tagcagcgac cacctcctgc cagccaccga ggaagctcca 550

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 ggaaacgctt tgtaaaaatg attttgcact gaaaataaaa gtgaaggaga 650
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 accatttaca agctgaacgg tgtgtccgaa agggacctga agaaatcggg 750
 gctgtggctc aaagacagct tgcagtgcac ctgtgaggag atgaacgaca 800
 tcaacgcgcc ctatctggtc atgggacaga aacagggtgg ggagctggtg 850
 atcacctcgg tgaagcgggtg gcagaagggg cagagagagt tcaagcgcac 900
 ctcccgagc atccgcaagc tgcagtgcta gtcccgcat cctgatggct 950
 ccgacaggcc tgctccagag cacggctgac catttctgct ccgggatctc 1000
 agctcccggtt cccaagcac actcctagct gctccagtct cagcctgggc 1050
 agcttcccc tgccttttgc acgtttgcat cccagcatt tcctgagtta 1100
 taaggccaca ggagtggata gctgttttca cctaaaggaa aagcccaccc 1150
 gaattttgta gaaatattca aactaataaa atcatgaata ttttaa 1196

<210> 415
 <211> 295
 <212> PRT
 <213> Homo sapiens

<400> 415
 Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser
 1 5 10 15
 His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln
 20 25 30
 Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val
 35 40 45
 Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu
 50 55 60
 Pro Asn Leu Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln
 65 70 75
 Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp
 80 85 90
 Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp
 95 100 105
 Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln
 110 115 120
 Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro
 125 130 135

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Trp | Pro | Asp | Met | Leu | Glu | Cys | Asp | Arg | Phe | Pro | Gln | Asp | Asn | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Cys | Ile | Pro | Leu | Ala | Ser | Ser | Asp | His | Leu | Leu | Pro | Ala | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Glu | Ala | Pro | Lys | Val | Cys | Glu | Ala | Cys | Lys | Asn | Lys | Asn | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Asp | Asn | Asp | Ile | Met | Glu | Thr | Leu | Cys | Lys | Asn | Asp | Phe | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Lys | Ile | Lys | Val | Lys | Glu | Ile | Thr | Tyr | Ile | Asn | Arg | Asp | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Ile | Ile | Leu | Glu | Thr | Lys | Ser | Lys | Thr | Ile | Tyr | Lys | Leu | Asn | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Val | Ser | Glu | Arg | Asp | Leu | Lys | Lys | Ser | Val | Leu | Trp | Leu | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Ser | Leu | Gln | Cys | Thr | Cys | Glu | Glu | Met | Asn | Asp | Ile | Asn | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Tyr | Leu | Val | Met | Gly | Gln | Lys | Gln | Gly | Gly | Glu | Leu | Val | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Ser | Val | Lys | Arg | Trp | Gln | Lys | Gly | Gln | Arg | Glu | Phe | Lys | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Ser | Arg | Ser | Ile | Arg | Lys | Leu | Gln | Cys | | | | | | |
| | | | | 290 | | | | | 295 | | | | | | |

<210> 416
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 416
 cctggctcgc tgctgctgct c 21

<210> 417
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 417
 cctcacaggt gcactgcaag ctgtc 25

<210> 418
 <211> 47
 <212> DNA

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 ggcatgatct ttgtgctggg gcaggccgag ggaataactca tcatgctggc 1200
 aatgacggca ctgactgtgc gacgctcgga gccgtccttg tccacctgcc 1250
 agcaggggga ggatccactt gactggacag tgtctctgct gctgatggcc 1300
 ggctgtgca ccttcttcag ctgcatacctg gcggtcttct tccacacccc 1350
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 ccgtgggcgg cgcagactca gggccgggtg tggaccgagg gggagcagga 1450
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 tgagcgcctt gtagtccagg ttgcccgcca catcgatgga ggcgaactgg 1750
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 gggagcgaat tacaagcgcg cacctgaaaa 1830

<210> 420
 <211> 560
 <212> PRT
 <213> Homo sapiens

<400> 420
 Met Ala Gly Pro Thr Glu Ala Glu Thr Gly Leu Ala Glu Pro Arg
 1 5 10 15
 Ala Leu Cys Ala Gln Arg Gly His Arg Thr Tyr Ala Arg Arg Trp
 20 25 30
 Val Phe Leu Leu Ala Ile Ser Leu Leu Asn Cys Ser Asn Ala Thr
 35 40 45
 Leu Trp Leu Ser Phe Ala Pro Val Ala Asp Val Ile Ala Glu Asp
 50 55 60
 Leu Val Leu Ser Met Glu Gln Ile Asn Trp Leu Ser Leu Val Tyr
 65 70 75
 Leu Val Val Ser Thr Pro Phe Gly Val Ala Ala Ile Trp Ile Leu
 80 85 90
 Asp Ser Val Gly Leu Arg Ala Ala Thr Ile Leu Gly Ala Trp Leu
 95 100 105
 Asn Phe Ala Gly Ser Val Leu Arg Met Val Pro Cys Met Val Val

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 423

tatgtggacc ggaccaagca cttcactgag gccaccaaga ttg 43

<210> 424

<211> 4313

<212> DNA

<213> Homo sapiens

<400> 424

gtccacatc ctgctcaact gggtcaggtc cctcttagac cagctcttgt 50
ccatcatttg ctgaagtgga ccaactagtt cccagtagg gggctctccc 100
tggcaattct tgatcggcgt ttggacatct cagatcgctt ccaatgaaga 150
tggccttgcc ttggggctct gcttgtttca taatcatcta actatgggac 200
aaggttgtgc cggcagctct gggggaagga gcacggggct gatcaagcca 250
tcaggaaac actggaggac ttgtccagcc ttgaaagaac tctagtgggt 300
tctgaatcta gccacttgg cggttaagcat gatgcaactt ctgcaacttc 350
tgctggggct tttggggcca ggtggctact tatttctttt aggggattgt 400
caggaggtga ccactctcac ggtgaaatac caagtgtcag aggaagtgcc 450
atctggtaca gtgatcggga agctgtccca ggaactgggc cgggaggaga 500
ggcggaggca agctggggcc gccttccagg tgttgacagct gcctcaggcg 550
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gcaacccatg cttgcatcca gtgtctctgt gtgggtcagc ctcttggtg 2000
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ctgatgctac cccacagag gaggcaagag cccaggact aacagctgac 4050
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 acggtttgtg gctgagataa gtgtttcctg gcaaacata tgtggagcac 4150
 aaagggctcag tcctctggca gaacagatgc cacggagtat cacaggcagg 4200
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 tgccaggaaa tgctctctga cctatcaata aaggaaaagc agtaaaaaaa 4300
 aaaaaaaaaa aaa 4313

<210> 425
 <211> 1184
 <212> PRT
 <213> Homo sapiens

<400> 425
 Met Met Gln Leu Leu Gln Leu Leu Leu Gly Leu Leu Gly Pro Gly
 1 5 10 15
 Gly Tyr Leu Phe Leu Leu Gly Asp Cys Gln Glu Val Thr Thr Leu
 20 25 30
 Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val
 35 40 45
 Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg
 50 55 60
 Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu
 65 70 75
 Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg
 80 85 90
 Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu
 95 100 105
 Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His
 110 115 120
 Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe
 125 130 135
 Pro Lys Gly Glu Gln Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu
 140 145 150
 Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly
 155 160 165
 Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe
 170 175 180
 Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu
 185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Val | Val | Lys | Glu | Leu | Asp | Arg | Glu | Ile | His | Ser | Phe | Phe | 200 | 205 | 210 |
| Asp | Leu | Val | Leu | Thr | Ala | Tyr | Asp | Asn | Gly | Asn | Pro | Pro | Lys | Ser | 215 | 220 | 225 |
| Gly | Thr | Ser | Leu | Val | Lys | Val | Asn | Val | Leu | Asp | Ser | Asn | Asp | Asn | 230 | 235 | 240 |
| Ser | Pro | Ala | Phe | Ala | Glu | Ser | Ser | Leu | Ala | Leu | Glu | Ile | Gln | Glu | 245 | 250 | 255 |
| Asp | Ala | Ala | Pro | Gly | Thr | Leu | Leu | Ile | Lys | Leu | Thr | Ala | Thr | Asp | 260 | 265 | 270 |
| Pro | Asp | Gln | Gly | Pro | Asn | Gly | Glu | Val | Glu | Phe | Phe | Leu | Ser | Lys | 275 | 280 | 285 |
| His | Met | Pro | Pro | Glu | Val | Leu | Asp | Thr | Phe | Ser | Ile | Asp | Ala | Lys | 290 | 295 | 300 |
| Thr | Gly | Gln | Val | Ile | Leu | Arg | Arg | Pro | Leu | Asp | Tyr | Glu | Lys | Asn | 305 | 310 | 315 |
| Pro | Ala | Tyr | Glu | Val | Asp | Val | Gln | Ala | Arg | Asp | Leu | Gly | Pro | Asn | 320 | 325 | 330 |
| Pro | Ile | Pro | Ala | His | Cys | Lys | Val | Leu | Ile | Lys | Val | Leu | Asp | Val | 335 | 340 | 345 |
| Asn | Asp | Asn | Ile | Pro | Ser | Ile | His | Val | Thr | Trp | Ala | Ser | Gln | Pro | 350 | 355 | 360 |
| Ser | Leu | Val | Ser | Glu | Ala | Leu | Pro | Lys | Asp | Ser | Phe | Ile | Ala | Leu | 365 | 370 | 375 |
| Val | Met | Ala | Asp | Asp | Leu | Asp | Ser | Gly | His | Asn | Gly | Leu | Val | His | 380 | 385 | 390 |
| Cys | Trp | Leu | Ser | Gln | Glu | Leu | Gly | His | Phe | Arg | Leu | Lys | Arg | Thr | 395 | 400 | 405 |
| Asn | Gly | Asn | Thr | Tyr | Met | Leu | Leu | Thr | Asn | Ala | Thr | Leu | Asp | Arg | 410 | 415 | 420 |
| Glu | Gln | Trp | Pro | Lys | Tyr | Thr | Leu | Thr | Leu | Leu | Ala | Gln | Asp | Gln | 425 | 430 | 435 |
| Gly | Leu | Gln | Pro | Leu | Ser | Ala | Lys | Lys | Gln | Leu | Ser | Ile | Gln | Ile | 440 | 445 | 450 |
| Ser | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Val | Phe | Glu | Lys | Ser | Arg | Tyr | 455 | 460 | 465 |
| Glu | Val | Ser | Thr | Arg | Glu | Asn | Asn | Leu | Pro | Ser | Leu | His | Leu | Ile | 470 | 475 | 480 |
| Thr | Ile | Lys | Ala | His | Asp | Ala | Asp | Leu | Gly | Ile | Asn | Gly | Lys | Val | | | |

| | | | |
|-----------------|---------------------|---------------------|------|
| Leu Arg Gly Gln | Ala Gly Glu Pro Cys | Glu Val Gly Gln Ser | His |
| 785 | | 790 | 795 |
| Lys Asp Val Asp | Lys Glu Ala Met Met | Glu Ala Gly Trp Asp | Pro |
| 800 | | 805 | 810 |
| Cys Leu Gln Ala | Pro Phe His Leu Thr | Pro Thr Leu Tyr Arg | Thr |
| 815 | | 820 | 825 |
| Leu Arg Asn Gln | Gly Asn Gln Gly Ala | Pro Ala Glu Ser Arg | Glu |
| 830 | | 835 | 840 |
| Val Leu Gln Asp | Thr Val Asn Leu Leu | Phe Asn His Pro Arg | Gln |
| 845 | | 850 | 855 |
| Arg Asn Ala Ser | Arg Glu Asn Leu Asn | Leu Pro Glu Pro Gln | Pro |
| 860 | | 865 | 870 |
| Ala Thr Gly Gln | Pro Arg Ser Arg Pro | Leu Lys Val Ala Gly | Ser |
| 875 | | 880 | 885 |
| Pro Thr Gly Arg | Leu Ala Gly Asp Gln | Gly Ser Glu Glu Ala | Pro |
| 890 | | 895 | 900 |
| Gln Arg Pro Pro | Ala Ser Ser Ala Thr | Leu Arg Arg Gln Arg | His |
| 905 | | 910 | 915 |
| Leu Asn Gly Lys | Val Ser Pro Glu Lys | Glu Ser Gly Pro Arg | Gln |
| 920 | | 925 | 930 |
| Ile Leu Arg Ser | Leu Val Arg Leu Ser | Val Ala Ala Phe Ala | Glu |
| 935 | | 940 | 945 |
| Arg Asn Pro Val | Glu Glu Leu Thr Val | Asp Ser Pro Pro Val | Gln |
| 950 | | 955 | 960 |
| Gln Ile Ser Gln | Leu Leu Ser Leu Leu | His Gln Gly Gln Phe | Gln |
| 965 | | 970 | 975 |
| Pro Lys Pro Asn | His Arg Gly Asn Lys | Tyr Leu Ala Lys Pro | Gly |
| 980 | | 985 | 990 |
| Gly Ser Arg Ser | Ala Ile Pro Asp Thr | Asp Gly Pro Ser Ala | Arg |
| 995 | | 1000 | 1005 |
| Ala Gly Gly Gln | Thr Asp Pro Glu Gln | Glu Glu Gly Pro Leu | Asp |
| 1010 | | 1015 | 1020 |
| Pro Glu Glu Asp | Leu Ser Val Lys Gln | Leu Leu Glu Glu Glu | Leu |
| 1025 | | 1030 | 1035 |
| Ser Ser Leu Leu | Asp Pro Ser Thr Gly | Leu Ala Leu Asp Arg | Leu |
| 1040 | | 1045 | 1050 |
| Ser Ala Pro Asp | Pro Ala Trp Met Ala | Arg Leu Ser Leu Pro | Leu |
| 1055 | | 1060 | 1065 |
| Thr Thr Asn Tyr | Arg Asp Asn Val Ile | Ser Pro Asp Ala Ala | Ala |

| | | |
|---|------|------|
| 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | | |
| 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | | |
| 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | | |
| 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | | |
| 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | | |
| 1145 | 1150 | 1155 |
| Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr | | |
| 1160 | 1165 | 1170 |
| Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu | | |
| 1175 | 1180 | |

<210> 426
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 426
 gtaagcacat gcctccagag gtgc 24

<210> 427
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 427
 gtgacgtgga tgcttgggat gttg 24

<210> 428
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 428
 tggacacctt cagtattgat gccaaagacag gccaggtcat tctgcgtcga 50

<210> 429
 <211> 2037

gtatgccttt agaataccgc accataatca ctgaagtcct tggagaactg 1400
cagttcaact tctatcaccg ttggtttgat gtgatcttcc tggtcagcgc 1450
tctctctagc atactcttcc tctatttggc tcacaaacag gcaccagaga 1500
agcaaatggc accttgaact taagcctact acagactgtt agaggccagt 1550
ggtttcaaaa tttagatata agagggggga aaaatggaac cagggcctga 1600
cattttataa acaaacaaaa tgctatggta gcatttttca ccttcatagc 1650
atactccttc cccgtcaggt gatactatga ccatgagtag catcagccag 1700
aacatgagag ggagaactaa ctcaagacaa tactcagcag agagcatccc 1750
gtgtggatat gaggctggtg tagaggcgga gaggagcaa gaaactaaag 1800
gtgaaaaata cactggaact ctggggcaag acatgtctat ggtagctgag 1850
ccaaacacgt aggatttccg ttttaagggt cacatggaaa aggttatagc 1900
tttgcttga gattgactca ttaaaatcag agactgtaac aaaaaaaaaa 1950
aaaaaaaaaa agggcgggccg cgactctaga gtcgacctgc agaagcttgg 2000
ccgccatggc ccaacttggt tattgcagct tataatg 2037

<210> 430
<211> 455
<212> PRT
<213> Homo sapiens

<400> 430
Met Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile
1 5 10 15
Leu Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe
20 25 30
Lys Asp Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser
35 40 45
Val Thr Phe Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe
50 55 60
Glu Ile Leu Gly Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp
65 70 75
Lys Met Asn Leu Cys Val Ile Leu Leu Ile Leu Val Phe Met Val
80 85 90
Pro Phe Tyr Ile Gly Tyr Phe Ile Val Ser Asn Ile Arg Leu Leu
95 100 105
His Lys Gln Arg Leu Leu Phe Ser Cys Leu Leu Trp Leu Thr Phe
110 115 120

| | | | | | |
|-----------------|---------|-----------------|---------|---------------------|-----|
| Met Tyr Phe Phe | Trp 125 | Lys Leu Gly Asp | Pro 130 | Phe Pro Ile Leu Ser | 135 |
| Pro Lys His Gly | Ile 140 | Leu Ser Ile Glu | Gln 145 | Leu Ile Ser Arg Val | 150 |
| Gly Val Ile Gly | Val 155 | Thr Leu Met Ala | Leu 160 | Leu Ser Gly Phe Gly | 165 |
| Ala Val Asn Cys | Pro 170 | Tyr Thr Tyr Met | Ser 175 | Tyr Phe Leu Arg Asn | 180 |
| Val Thr Asp Thr | Asp 185 | Ile Leu Ala Leu | Glu 190 | Arg Arg Leu Leu Gln | 195 |
| Thr Met Asp Met | Ile 200 | Ile Ser Lys Lys | Lys 205 | Arg Met Ala Met Ala | 210 |
| Arg Arg Thr Met | Phe 215 | Gln Lys Gly Glu | Val 220 | His Asn Lys Pro Ser | 225 |
| Gly Phe Trp Gly | Met 230 | Ile Lys Ser Val | Thr 235 | Thr Ser Ala Ser Gly | 240 |
| Ser Glu Asn Leu | Thr 245 | Leu Ile Gln Gln | Glu 250 | Val Asp Ala Leu Glu | 255 |
| Glu Leu Ser Arg | Gln 260 | Leu Phe Leu Glu | Thr 265 | Ala Asp Leu Tyr Ala | 270 |
| Thr Lys Glu Arg | Ile 275 | Glu Tyr Ser Lys | Thr 280 | Phe Lys Gly Lys Tyr | 285 |
| Phe Asn Phe Leu | Gly 290 | Tyr Phe Phe Ser | Ile 295 | Tyr Cys Val Trp Lys | 300 |
| Ile Phe Met Ala | Thr 305 | Ile Asn Ile Val | Phe 310 | Asp Arg Val Gly Lys | 315 |
| Thr Asp Pro Val | Thr 320 | Arg Gly Ile Glu | Ile 325 | Thr Val Asn Tyr Leu | 330 |
| Gly Ile Gln Phe | Asp 335 | Val Lys Phe Trp | Ser 340 | Gln His Ile Ser Phe | 345 |
| Ile Leu Val Gly | Ile 350 | Ile Ile Val Thr | Ser 355 | Ile Arg Gly Leu Leu | 360 |
| Ile Thr Leu Thr | Lys 365 | Phe Phe Tyr Ala | Ile 370 | Ser Ser Ser Lys Ser | 375 |
| Ser Asn Val Ile | Val 380 | Leu Leu Leu Ala | Gln 385 | Ile Met Gly Met Tyr | 390 |
| Phe Val Ser Ser | Val 395 | Leu Leu Ile Arg | Met 400 | Ser Met Pro Leu Glu | 405 |
| Tyr Arg Thr Ile | Ile | Thr Glu Val Leu | Gly | Glu Leu Gln Phe Asn | |

| | | |
|-------------------------------------|-------------------------|-----|
| 410 | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile | Phe Leu Val Ser Ala Leu | |
| 425 | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala | His Lys Gln Ala Pro Glu | |
| 440 | 445 | 450 |
| Lys Gln Met Ala Pro | | |
| 455 | | |

<210> 431
 <211> 407
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 78, 81, 113, 157, 224, 297
 <223> unknown base

<400> 431
 catggaagt ggagcggag ccttccttac actcgccatg agtttcctca 50
 tcgactccag catcatgatt acctcccnga nactatTTTT tggatttggg 100
 tggcttttct tcnegccaa tgtttaaaga ctatgagata cgtcagtatg 150
 ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200
 gagctcatca tctttgaaat cttnnggagta ttgaatagca gctcccgtta 250
 ttttactgg aaaatgaacc tgtgtgtaat tctgtgatc ctggttntca 300
 tgggtgccttt ttacattggc tattttattg tgagcaatat cgcactactg 350
 cataaacaac gactgctttt ttctgtctc ttatggctga cctttatgta 400
 tttccag 407

<210> 432
 <211> 457
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434
 <223> unknown base

<400> 432
 gtgttgccct tggggagggg aaggggagcc nggcccttct ctaaaatttg 50
 gccagggtt tcttnttga attccgggtt nngnatacct tcccagaaaa 100
 tatttttttg atttggggta gnttttttct atgcgccaat tgtttaaaga 150
 ctatgagata cgtcagtatg ttgtacaggt gatnttntcc gtgacgtttg 200

cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
 ttgaatagca gctcccgtta ttttcaactgg aaaatgaacc tgtgtgtaat 300
 tctgctgata ctgggttttca tgggtgccttt ttacattggc tattttattg 350
 tgagcaatat ccgactactg cataaacaac gactgctttt ttctgtctn 400
 ttatggctga cctttatgta tttnttntgg aaantaggag atccctttcc 450
 cattctc 457

<210> 433
 <211> 20
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe

<400> 433
 aagtggagcc ggagccttcc 20

<210> 434
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 434
 tcgttgttta tgcagtagtc gg 22

<210> 435
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 435
 attgtttaaa gactatgaga tacgtcagta tgttgtacag g 41

<210> 436
 <211> 3951
 <212> DNA
 <213> Homo sapiens

<400> 436
 ctcgcgcagg gatcgtecca tggccggggc tcggagccgc gacccttggg 50
 gggcctccgg gatttgctac ctttttggct ccctgctcgt cgaactgctc 100
 ttctcacggg ctgtgcctt caatctggac gtgatgggtg ccttgcgcaa 150
 ggagggcgag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200

agttgcagcc cgcaccccag agctggctgc tggtaggtgc tccccaggcc 250
 ctggctcttc ctgggcagca ggcgaatcgc actggaggcc tcttcgcttg 300
 cccgttgagc ctggaggaga ctgactgcta cagagtggac atcgaccagg 350
 gagctgatat gcaaaaggaa agcaaggaga accagtgggtt gggagtcagt 400
 gttcggagcc aggggcctgg gggcaagatt gttacctgtg cacaccgata 450
 tgaggcaagg cagcgagtgg accagatcct ggagacgcgg gatatgattg 500
 gtgcgtgctt tgtgtcagc caggacctgg ccatccggga tgagttggat 550
 ggtggggaat ggaagttctg tgagggacgc cccaaggcc atgaacaatt 600
 tgggttctgc cagcagggca cagctgccgc cttctccctt gatagccact 650
 acctctctt tggggcccca ggaacctata attggaaggc cacggccagg 700
 gtggagctct gtgcacaggc ctgagcggac ctggcacacc tggacgacgg 750
 tccctacgag gcggggggag agaaggagca ggacccccgc ctcatcccg 800
 tccctgcca cagctacttt ggcttctcta ttgactcggg gaaaggctctg 850
 gtgcgtgcag aagagctgag ctttgtggct ggagcccccc gcgccaacca 900
 caagggtgct gtggtcatcc tgcgcaagga cagcgccagt cgcttggtgc 950
 ccgaggttat gctgtctggg gagcgctga cctccggctt tggctactca 1000
 ctggctgtgg ctgacctcaa cagtgatggc tggccagacc tgatagtggg 1050
 tgccccctac ttctttgagc gccagaaga gctggggggg gctgtgtatg 1100
 tgtacttgaa ccaggggggt cactgggctg ggatctcccc tctccggctc 1150
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 cctcaaccaa gatggctttc cagatattgc agtgggtgcc ccctttgatg 1250
 gtgatgggaa agtcttcac taccatggga gcagcctggg ggttgtcgcc 1300
 aaaccttcac aggtgctgga ggcgaggct gtgggcatca agagcttcgg 1350
 ctactccctg tcaggcagct tggatatgga tgggaaccaa taccctgacc 1400
 tgctgggtgg ctccctggct gacaccgag tgctcttcag ggccagaccc 1450
 atcctccatg tctcccatga ggtctctatt gctccacgaa gcatcgacct 1500
 ggagcagccc aactgtgctg gcggccactc ggtctgtgtg gacctagggt 1550
 tctgtttcag ctacattgca gtccccagca gctatagccc tactgtggcc 1600
 ctggactatg tgtagatgc ggacacagac cggaggctcc ggggcccagg 1650

tccccgtgtg acgttcctga gccgtaacct ggaagaaccc aagcaccagg 1700
cctcggggcac cgtgtggctg aagcaccagc atgaccgagt ctgtggagac 1750
gccatgttcc agctccagga aaatgtcaaa gacaagcttc gggccattgt 1800
agtgaccttg tcctacagtc tccagacccc tcggctccgg cgacaggctc 1850
ctggccaggg gctgcctcca gtggccccc tctcaatgc ccaccagccc 1900
agcaccagc gggcagagat ccacttctg aagcaaggct gtggtgaaga 1950
caagatctgc cagagcaatc tgcagctggt ccacgcccgc ttctgtaccc 2000
gggtcagcga cacggaattc caacctctgc ccatggatgt ggatggaaca 2050
acagccctgt ttgcaactgag tgggcagcca gtcattggcc tggagctgat 2100
ggtcaccaac ctgccatcg acccagccca gcccaggct gatggggatg 2150
atgcccataga agcccagctc ctggatcatgc ttcctgactc actgcactac 2200
tcagggttcc gggccctgga ccctgaggag aagccactct gcctgtccaa 2250
tgagaatgcc tcccatgttg agtgtgagct ggggaacccc atgaagagag 2300
gtgccagggt caccttctac ctcatcctta gcacctccgg gatcagcatt 2350
gagaccacgg aactggagggt agagctgctg ttggccacga tcagtgaaga 2400
ggagctgcat ccagtctctg cagcagcccg tgtcttcatt gagctgccac 2450
tgtccattgc aggaatggcc attccccagc aactcttctt ctctggtgtg 2500
gtgagggggc agagagccat gcagtctgag cgggatgtgg gcagcaagggt 2550
caagtatgag gtcacgggtt ccaaccaagg ccagtcgctc agaaccctgg 2600
gctctgcctt cctcaacatc atgtggcctc atgagattgc caatgggaag 2650
tggttgctgt acccaatgca ggttgagctg gagggcgggc aggggcctgg 2700
gcagaaaggg ctttgccttc ccaggcccaa catcctccac ctggatgtgg 2750
acagtaggga taggaggcgg cgggagctgg agccacctga gcagcaggag 2800
cctggtgagc ggcaggagcc cagcatgtcc tggtgccag tgcctctgc 2850
tgagaagaag aaaaacatca ccctggactg cggccggggc acggccaact 2900
gtgtggtgtt cagctgccc cttacagct ttgaccgagc ggctgtgctg 2950
catgtctggg gccgtctctg gaacagcacc tttctggagg agtactcagc 3000
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gtatacttgg accccatggc tgtggtggca gaaggagtgc cctggtgggt 3150
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tgctcctgtg gaagatggga ttcttcaaac gggcgaagca ccccgaggcc 3250
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ctccttggga tgaagagggg agagtgggct gctggtgtcg catcaagatt 3550
tggcaggatc ggcttcctca ggggcacaga cctctccac ccacaagaac 3600
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caaaggtggg gagaagggat cctaattcct tcctctcca ttcacctgt 3750
gtaacaggac cccaaggacc tgcctccccg gaagtgcctt aacctagagg 3800
gtcggggagg aggttgtgtc actgactcag gctgctcctt ctctagtttc 3850
ccctctcctc tgaccttagt ttgctgcat cagtctagt gtttcgtggg 3900
ttcgtctatt tattaataaa tatttgagaa caaaaaaaaa aaaaaaaaaa 3950

a 3951

<210> 437
<211> 1141
<212> PRT
<213> Homo sapiens

<400> 437
Met Ala Gly Ala Arg Ser Arg Asp Pro Trp Gly Ala Ser Gly Ile
1 5 10 15
Cys Tyr Leu Phe Gly Ser Leu Leu Val Glu Leu Leu Phe Ser Arg
20 25 30
Ala Val Ala Phe Asn Leu Asp Val Met Gly Ala Leu Arg Lys Glu
35 40 45
Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg
50 55 60
Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro
65 70 75
Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

| | 80 | 85 | 90 |
|-------------------------------------|-------------------------|-----|----|
| Leu Phe Ala Cys Pro Leu Ser Leu Glu | Glu Thr Asp Cys Tyr Arg | | |
| 95 | 100 | 105 | |
| Val Asp Ile Asp Gln Gly Ala Asp Met | Gln Lys Glu Ser Lys Glu | | |
| 110 | 115 | 120 | |
| Asn Gln Trp Leu Gly Val Ser Val Arg | Ser Gln Gly Pro Gly Gly | | |
| 125 | 130 | 135 | |
| Lys Ile Val Thr Cys Ala His Arg Tyr | Glu Ala Arg Gln Arg Val | | |
| 140 | 145 | 150 | |
| Asp Gln Ile Leu Glu Thr Arg Asp Met | Ile Gly Arg Cys Phe Val | | |
| 155 | 160 | 165 | |
| Leu Ser Gln Asp Leu Ala Ile Arg Asp | Glu Leu Asp Gly Gly Glu | | |
| 170 | 175 | 180 | |
| Trp Lys Phe Cys Glu Gly Arg Pro Gln | Gly His Glu Gln Phe Gly | | |
| 185 | 190 | 195 | |
| Phe Cys Gln Gln Gly Thr Ala Ala Ala | Phe Ser Pro Asp Ser His | | |
| 200 | 205 | 210 | |
| Tyr Leu Leu Phe Gly Ala Pro Gly Thr | Tyr Asn Trp Lys Gly Thr | | |
| 215 | 220 | 225 | |
| Ala Arg Val Glu Leu Cys Ala Gln Gly | Ser Ala Asp Leu Ala His | | |
| 230 | 235 | 240 | |
| Leu Asp Asp Gly Pro Tyr Glu Ala Gly | Gly Glu Lys Glu Gln Asp | | |
| 245 | 250 | 255 | |
| Pro Arg Leu Ile Pro Val Pro Ala Asn | Ser Tyr Phe Gly Phe Ser | | |
| 260 | 265 | 270 | |
| Ile Asp Ser Gly Lys Gly Leu Val Arg | Ala Glu Glu Leu Ser Phe | | |
| 275 | 280 | 285 | |
| Val Ala Gly Ala Pro Arg Ala Asn His | Lys Gly Ala Val Val Ile | | |
| 290 | 295 | 300 | |
| Leu Arg Lys Asp Ser Ala Ser Arg Leu | Val Pro Glu Val Met Leu | | |
| 305 | 310 | 315 | |
| Ser Gly Glu Arg Leu Thr Ser Gly Phe | Gly Tyr Ser Leu Ala Val | | |
| 320 | 325 | 330 | |
| Ala Asp Leu Asn Ser Asp Gly Trp Pro | Asp Leu Ile Val Gly Ala | | |
| 335 | 340 | 345 | |
| Pro Tyr Phe Phe Glu Arg Gln Glu Glu | Leu Gly Gly Ala Val Tyr | | |
| 350 | 355 | 360 | |
| Val Tyr Leu Asn Gln Gly Gly His Trp | Ala Gly Ile Ser Pro Leu | | |
| 365 | 370 | 375 | |

Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala
 965 970 975
 Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu
 980 985 990
 Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn
 995 1000 1005
 Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala
 1010 1015 1020
 Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val
 1025 1030 1035
 Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu
 1040 1045 1050
 Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Leu Trp Lys
 1055 1060 1065
 Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro
 1070 1075 1080
 Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe
 1085 1090 1095
 Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser
 1100 1105 1110
 Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp
 1115 1120 1125
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 1130 1135 1140
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<210> 438
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 438
 ggctgacacc gcagtgtctt tcag 24

 <210> 439
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

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<400> 439
  gctgctgggg actgcaatgt agct 24

<210> 440
<211> 46
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<220>
<223> Synthetic oligonucleotide probe

<400> 440
  catcctccat gtctcccatg aggtctctat tgctccacga agcatc 46

<210> 441
<211> 1964
<212> DNA
<213> Homo sapiens

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aaaaaaaaaa aaaa 1964

<210> 442
<211> 436
<212> PRT
<213> Homo sapiens

<400> 442
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20 25 30
Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu
35 40 45
Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Tyr | Lys | Pro | Thr | Gln | Cys | His | Gly | Ser | Val | Gly | Gln | Cys | Trp | |
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| Cys | Val | Asp | Arg | Tyr | Gly | Asn | Glu | Val | Met | Gly | Ser | Arg | Ile | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | Val | Ala | Asp | Cys | Ala | Ile | Asp | Phe | Glu | Ile | Ser | Gly | Asp | Phe | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ala | Ser | Gly | Asp | Phe | His | Glu | Trp | Thr | Asp | Asp | Glu | Asp | Asp | Glu | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Asp | Asp | Ile | Met | Asn | Asp | Glu | Asp | Glu | Ile | Glu | Asp | Asp | Asp | Glu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Asp | Glu | Gly | Asp | Asp | Asp | Gly | Gly | Asp | Asp | His | Asp | Val | Tyr | | |
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<210> 443

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 443

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<210> 444

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 444

catcatgggc atcaccacca tcatcatc 28

<210> 445

<211> 48

<212> DNA

<213> Artificial Sequence

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<400> 445

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<210> 446

<211> 3617

<212> DNA

<213> Homo sapiens

<400> 446

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| | | | | | |
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| | 110 | | 115 | | 120 |
| Phe Phe Glu Leu Ile Leu Asp Asn Met Gly Glu Gln Ala Gln Glu | | | | | |
| | 125 | | 130 | | 135 |
| Gln Glu Asp Trp Lys Lys Tyr Ile Thr Gly Thr Asp Ile Leu Asp | | | | | |
| | 140 | | 145 | | 150 |
| Met Lys Leu Glu Asp Ile Leu Glu Ser Ile Asn Ser Ile Lys Ser | | | | | |
| | 155 | | 160 | | 165 |
| Arg Leu Ser Lys Ser Gly His Ile Gln Ile Leu Leu Arg Ala Phe | | | | | |
| | 170 | | 175 | | 180 |
| Glu Ala Arg Asp Arg Asn Ile Gln Glu Ser Asn Phe Asp Arg Val | | | | | |
| | 185 | | 190 | | 195 |
| Asn Phe Trp Ser Met Val Asn Leu Val Val Met Val Val Val Ser | | | | | |
| | 200 | | 205 | | 210 |
| Ala Ile Gln Val Tyr Met Leu Lys Ser Leu Phe Glu Asp Lys Arg | | | | | |
| | 215 | | 220 | | 225 |
| Lys Ser Arg Thr | | | | | |

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<210> 449
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<220>
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<400> 449
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<210> 450
 <211> 43
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

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<210> 451
 <211> 859
 <212> DNA
 <213> Homo sapiens

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 aaaaaaaaaa 859

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 <211> 175
 <212> PRT
 <213> Homo sapiens

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 Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys
 35 40 45
 Ala Tyr Gly Ser Pro Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser

| | 50 | 55 | 60 |
|---|-----|-----|-----|
| Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys | 65 | 70 | 75 |
| Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser | 80 | 85 | 90 |
| Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly | 95 | 100 | 105 |
| Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp | 110 | 115 | 120 |
| Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys | 125 | 130 | 135 |
| Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser | 140 | 145 | 150 |
| Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala | 155 | 160 | 165 |
| Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp | 170 | 175 | |

<210> 453
 <211> 550
 <212> DNA
 <213> Homo sapiens

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<210> 454
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 454

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| Met | Arg | Gly | Thr | Arg | Leu | Ala | Leu | Leu | Ala | Leu | Val | Leu | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Gly | Glu | Leu | Ala | Pro | Ala | Leu | Arg | Cys | Tyr | Val | Cys | Pro | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Pro | Thr | Gly | Val | Ser | Asp | Cys | Val | Thr | Ile | Ala | Thr | Cys | Thr | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asn | Glu | Thr | Met | Cys | Lys | Thr | Thr | Leu | Tyr | Ser | Arg | Glu | Ile | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Tyr | Pro | Phe | Gln | Gly | Asp | Ser | Thr | Val | Thr | Lys | Ser | Cys | Ala | Ser |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Cys | Lys | Pro | Ser | Asp | Val | Asp | Gly | Ile | Gly | Gln | Thr | Leu | Pro |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Val | Ser | Cys | Cys | Asn | Thr | Glu | Leu | Cys | Asn | Val | Asp | Gly | Ala | Pro |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Ala | Leu | Asn | Ser | Leu | His | Cys | Gly | Ala | Leu | Thr | Leu | Leu | Pro | Leu |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Leu | Ser | Leu | Arg | Leu | | | | | | | | | | |
| | | | 125 | | | | | | | | | | | |

<210> 455

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 455

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<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

| | | | | | | | | | | | | | | |
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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Met | Val | Ala | Ala | Ala | Leu | Gly | Gly | His | Pro | Leu | Leu | Gly | Val | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Thr | Leu | Asn | Ser | Val | Leu | Asn | Ser | Asn | Ala | Ile | Lys | Asn | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Pro | Pro | Leu | Gly | Gly | Ala | Ala | Gly | His | Pro | Gly | Ser | Ala | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Ala | Ala | Pro | Gly | Ile | Leu | Tyr | Pro | Gly | Gly | Asn | Lys | Tyr | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu | 80 | 85 | 90 |
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp | 95 | 100 | 105 |
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg | 110 | 115 | 120 |
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn | 125 | 130 | 135 |
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile | 140 | 145 | 150 |
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu | 155 | 160 | 165 |
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His | 170 | 175 | 180 |
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys | 185 | 190 | 195 |
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys | 200 | 205 | 210 |
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg | 215 | 220 | 225 |
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly | 230 | 235 | 240 |
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser | 245 | 250 | 255 |
| Asn | Ser | Ser | Arg | Leu | His | Thr | Cys | Gln | Arg | His | | | | | 260 | 265 | |

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 <223> unknown base

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 aataagtacc agaccattga caattaccag ccgtacccgt gcgcagagga 400
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 atgcgtcang ctatgtgtg ccccggaat tactgcaaaa atggaatatg 550
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 ctgaaagctt tggtaatgat catagcacct tggatggg 638

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 accagcagtg aatcttaatg ttactttaaa tcagaacttg cataagaaag 400
 agaatgggag tctgggttaaa taaagatgac tatatcagag acttgaaaag 450
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu
 50 55 60
 Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly
 65 70 75
 Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu
 80 85 90
 Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu
 95 100 105
 Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr
 110 115 120
 Asp Phe Gly Ile Tyr Asp Asp Asp Pro Glu Ile Ile Thr Leu Glu
 125 130 135
 Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe
 140 145 150
 Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala
 155 160 165
 Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg
 170 175 180
 Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met
 185 190 195
 Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 200 | | 205 | | 210 |
| Met Ala Pro Val | Lys Tyr His Gly Asp | Arg Ser Lys Glu Ser | Leu | | |
| | 215 | 220 | 225 | | |
| Val Ser Phe Ala | Met Gln His Val Arg | Ser Thr Val Thr Glu | Leu | | |
| | 230 | 235 | 240 | | |
| Trp Thr Gly Asn | Phe Val Asn Ser Ile | Gln Thr Ala Phe Ala | Ala | | |
| | 245 | 250 | 255 | | |
| Gly Ile Gly Trp | Leu Ile Thr Phe Cys | Ser Lys Gly Gly Asp | Cys | | |
| | 260 | 265 | 270 | | |
| Leu Thr Ser Gln | Thr Arg Leu Arg Leu | Ser Gly Met Leu Phe | Leu | | |
| | 275 | 280 | 285 | | |
| Asn Ser Leu Asp | Ala Lys Glu Ile Tyr | Leu Glu Val Ile His | Asn | | |
| | 290 | 295 | 300 | | |
| Leu Pro Asp Phe | Glu Leu Leu Ser Ala | Asn Thr Leu Glu Asp | Arg | | |
| | 305 | 310 | 315 | | |
| Leu Ala His His | Arg Trp Leu Leu Phe | Phe His Phe Gly Lys | Asn | | |
| | 320 | 325 | 330 | | |
| Glu Asn Ser Asn | Asp Pro Glu Leu Lys | Lys Leu Lys Thr Leu | Leu | | |
| | 335 | 340 | 345 | | |
| Lys Asn Asp His | Ile Gln Val Gly Arg | Phe Asp Cys Ser Ser | Ala | | |
| | 350 | 355 | 360 | | |
| Pro Asp Ile Cys | Ser Asn Leu Tyr Val | Phe Gln Pro Ser Leu | Ala | | |
| | 365 | 370 | 375 | | |
| Val Phe Lys Gly | Gln Gly Thr Lys Glu | Tyr Glu Ile His His | Gly | | |
| | 380 | 385 | 390 | | |
| Lys Lys Ile Leu | Tyr Asp Ile Leu Ala | Phe Ala Lys Glu Ser | Val | | |
| | 395 | 400 | 405 | | |
| Asn Ser His Val | Thr Thr Leu Gly Pro | Gln Asn Phe Pro Ala | Asn | | |
| | 410 | 415 | 420 | | |
| Asp Lys Glu Pro | Trp Leu Val Asp Phe | Phe Ala Pro Trp Cys | Pro | | |
| | 425 | 430 | 435 | | |
| Pro Cys Arg Ala | Leu Leu Pro Glu Leu | Arg Arg Ala Ser Asn | Leu | | |
| | 440 | 445 | 450 | | |
| Leu Tyr Gly Gln | Leu Lys Phe Gly Thr | Leu Asp Cys Thr Val | His | | |
| | 455 | 460 | 465 | | |
| Glu Gly Leu Cys | Asn Met Tyr Asn Ile | Gln Ala Tyr Pro Thr | Thr | | |
| | 470 | 475 | 480 | | |
| Val Val Phe Asn | Gln Ser Asn Ile His | Glu Tyr Glu Gly His | His | | |
| | 485 | 490 | 495 | | |

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actccccagg ctgttcacac tgcc 24

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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 461
gatcagccag ccaataccag cagc 24

<210> 462
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 463
<211> 1818
<212> DNA
<213> Homo sapiens

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agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200
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<210> 464

<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ile | Ile | Leu | Glu | Ile | Leu | Leu | Leu | Ile | Thr | Ile | Ile | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Tyr | Ser | Tyr | Leu | Glu | Ser | Leu | Val | Lys | Phe | Phe | Ile | Pro | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | | 35 | 40 | 45 |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln | | 50 | 55 | 60 |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu | | 65 | 70 | 75 |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr | | 80 | 85 | 90 |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn | | 95 | 100 | 105 |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn | | 110 | 115 | 120 |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu | | 125 | 130 | 135 |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp | | 140 | 145 | 150 |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly | | 155 | 160 | 165 |
| His | Ile | Val | Thr | Val | Ala | Ser | Val | Cys | Gly | His | Glu | Gly | Ile | Pro | | 170 | 175 | 180 |
| Tyr | Leu | Ile | Pro | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe | | 185 | 190 | 195 |
| His | Arg | Gly | Leu | Thr | Ser | Glu | Leu | Gln | Ala | Leu | Gly | Lys | Thr | Gly | | 200 | 205 | 210 |
| Ile | Lys | Thr | Ser | Cys | Leu | Cys | Pro | Val | Phe | Val | Asn | Thr | Gly | Phe | | 215 | 220 | 225 |
| Thr | Lys | Asn | Pro | Ser | Thr | Arg | Leu | Trp | Pro | Val | Leu | Glu | Thr | Asp | | 230 | 235 | 240 |
| Glu | Val | Val | Arg | Ser | Leu | Ile | Asp | Gly | Ile | Leu | Thr | Asn | Lys | Lys | | 245 | 250 | 255 |
| Met | Ile | Phe | Val | Pro | Ser | Tyr | Ile | Asn | Ile | Phe | Leu | Arg | Leu | Gln | | 260 | 265 | 270 |
| Lys | Phe | Leu | Pro | Glu | Arg | Ala | Ser | Ala | Ile | Leu | Asn | Arg | Met | Gln | | 275 | 280 | 285 |
| Asn | Ile | Gln | Phe | Glu | Ala | Val | Val | Gly | His | Lys | Ile | Lys | Met | Lys | | 290 | 295 | 300 |

<210> 465

<211> 1547

<212> DNA

<213> Homo sapiens

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atcgatatgg ttttttaaga ttaatatatt tcaggtatatt aatacga 1547

<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

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Ala Ala His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr
35 40 45

Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu
50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser
65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp
95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln
110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser
125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro
140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala
155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg
170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro
185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala
200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys
215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys
230 235 240

104201-54402001

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Asp | Glu | Asp | Ala | Ala | Gln | Leu | Leu | Gln | Leu | Leu | Gln | Val | Asp | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Leu | Arg | Phe | Pro | Pro | Ser | Tyr | Arg | Asn | Arg | Thr | Ala | Ser | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Trp | Glu | Glu | Asp | Trp | Phe | Ala | Lys | Ile | Pro | Leu | Ala | Trp | Arg | Gln | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Leu | Tyr | Lys | Leu | Tyr | Glu | Ala | Asp | Phe | Val | Leu | Phe | Gly | Tyr | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Pro | Lys | Pro | Glu | Asn | Leu | Leu | Arg | Asp | | | | | | | |
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 <211> 1071
 <212> DNA
 <213> Homo sapiens

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 acgggatggc tacgggaacg cgctatgccg ggaaggtggt ggtcgtgacc 150
 gggggcgggc gcggcatcgg agctgggata gtgcgcgcct tcgtgaacag 200
 cggggccccga gtggttatct gcgacaagga tgagtctggg ggccggggccc 250
 tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300
 gaagatgatg tgaagacct ggtttctgag accatccgcc gatttgccg 350
 cctggattgt gttgtcaaca acgctggcca ccaccaccc ccacagaggc 400

ctgaggagac ctctgccag ggattccgcc agctgctgga gctgaaccta 450
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 tcaaggaat gtcataca tctccagcct ggtgggggca atcggccagg 550
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 ctccccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700
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 aggactctcc cccccaaac tccaacctgt atcagatgca gccccaaagc 1000
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<210> 468

<211> 270

<212> PRT

<213> Homo sapiens

<400> 468

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Gly | Thr | Arg | Tyr | Ala | Gly | Lys | Val | Val | Val | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gly | Gly | Arg | Gly | Ile | Gly | Ala | Gly | Ile | Val | Arg | Ala | Phe | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ser | Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Arg | Ala | Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Asp | Val | Thr | Gln | Glu | Asp | Asp | Val | Lys | Thr | Leu | Val | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Ile | Arg | Arg | Phe | Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | His | His | Pro | Pro | Pro | Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Phe | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr | Leu | Arg | Lys | Ser | Gln | Gly | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly | Ala | Ile | Gly | Gln | Ala | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala | Val | Thr | Ala | Met | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly | Val | Arg | Val | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp | Glu | Glu | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu | Gly | Met | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ala | Ser | Arg | Ser | Thr | Pro | Val | Asp | Ala | Pro | Asp | Ile | Pro | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

<210> 469
 <211> 687
 <212> DNA
 <213> Homo sapiens

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 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 ggcccagctg aggaacagct cagagctggc ccagagaaaag tgtgaggtca 300
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 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaaccocct caccatgcag gaggaccgca 450
 gcatggtgag cgtgccggtg ttcagccagg ttctgtgctg ccgccgcctc 500
 tgcccgccac cgccccgcac agggccttgc cgccagcgcg cagtcattga 550

gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600
gccaggccag cagcccagaga ccatactcct tgcacctttg tgccaagaaa 650
ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470
<211> 180
<212> PRT
<213> Homo sapiens

<400> 470
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20 25 30
Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val
35 40 45
Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
50 55 60
Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
65 70 75
Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
80 85 90
Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
95 100 105
Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
110 115 120
Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
125 130 135
Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
140 145 150
Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
155 160 165
Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
170 175 180

<210> 471
<211> 2368
<212> DNA
<213> Homo sapiens

<400> 471
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ctccccgccg agaagcctcg ctcgggcgccc aacatggcgg gtggggcgctg 150
 cgccccgcag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200
 cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250
 cagcccatga ccgcctccaa ctggacgctg gtgatggagg gcgagtggat 300
 gctgaaatth tacgccccat ggtgtccatc ctgccagcag actgattcag 350
 aatgggaggc ttttgcaaag aatggtgaaa tacttcagat cagtgtgggg 400
 aaggtagatg tcattcaaga accaggthtg agtggccgct tctttgtcac 450
 cactctccca gcattthttc atgcaaagga tgggatattc cgccgttatt 500
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 gatgtctgga atggctggtc ttttagcat ctctggcaag atatggcatc 650
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 gtgtthttcg tcatagccac ctgggtthtt ggctthttta tgggtctggt 750
 cttggtggtg atatcagaat gtttctatgt gccacttcca aggcatttat 800
 ctgagcgthc tgagcagaat cggagatcag aggaggctca tagagctgaa 850
 cagttgcagg atgcggagga ggaaaaagat gattcaaatg aagaagaaaa 900
 caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950
 aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000
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 gatctgthtg gagactggga tgggaacaag ttcattthact taggggtcag 1450
 agagtctcga ccagaggagg ccattcccag tctaatcag cacctthcag 1500
 agacaaggct gcaggccctg tgaaatgaaa gccaaagcag agcctthgct 1550

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 aactcttca ctattatctc ttggtcagag gactccaata acagccaggt 1850
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 taaccataac ccctgaagct gtgactgcc aacatctcaa atgaaatgtt 1950
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 aaggtagtct tgtgaagaaa agttgaatac tgttttgttt tcacttcaag 2150
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 gatTTttcctt cagtgatgtg cttttgggtga aagaattaat gaactccagt 2250
 acctgaaagt gaaagatttg atTTtgTTtc catcttctgt aatcttccaa 2300
 agaattatat ctttgtaaatt ctctcaatac tcaatctact gtaagtaccc 2350
 agggaggcta atttcttt 2368

<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Gly | Arg | Cys | Gly | Pro | Gln | Leu | Thr | Ala | Leu | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Trp | Ile | Ala | Ala | Val | Ala | Ala | Thr | Ala | Gly | Pro | Glu | Glu | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Leu | Pro | Pro | Glu | Gln | Ser | Arg | Val | Gln | Pro | Met | Thr | Ala | Ser |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asn | Trp | Thr | Leu | Val | Met | Glu | Gly | Glu | Trp | Met | Leu | Lys | Phe | Tyr |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Ala | Pro | Trp | Cys | Pro | Ser | Cys | Gln | Gln | Thr | Asp | Ser | Glu | Trp | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Ala | Phe | Ala | Lys | Asn | Gly | Glu | Ile | Leu | Gln | Ile | Ser | Val | Gly | Lys |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95 | 100 | 105 |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 |
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | 170 | 175 | 180 |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | 185 | 190 | 195 |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | 200 | 205 | 210 |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | 215 | 220 | 225 |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | 230 | 235 | 240 |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | 245 | 250 | 255 |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | 260 | 265 | 270 |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | 275 | 280 | 285 |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | 290 | 295 | 300 |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | 305 | 310 | 315 |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | 320 | 325 | 330 |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | 335 | 340 | 345 |
| Asp Lys Gly Leu | | | | | | | | | | | | | | | | | |

<210> 473

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 474
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 474
ctctcctcat ccacaccagc agcc 24

<210> 475
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 475
gtggatgctg aaattttacg ccccatgggtg tccatcctgc cagc 44

<210> 476
<211> 2478
<212> DNA
<213> Homo sapiens

<400> 476
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caggggcaga aagaaaagag ctcccaaagt ctatatctat tcaggggctc 150
tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200
atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250
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gggtaccatg ggggttcttt ccagcccttg tcctcctaatt tggattatat 400
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ctcaaatgaa ttgggattta tagtaaaaca agtgtcttcc caacctgata 550
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 aagttttcaa tgtaagagga aggggtggaga aggagagaga aatatgtgag 800
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 gtagggaaac tgctctcata ggaaagtitt ctgcttttta aatacaaaaa 2050

| | | | | | |
|---|-----|--|-----|--|-----|
| | 170 | | 175 | | 180 |
| Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile Cys | | | | | |
| | 185 | | 190 | | 195 |
| Glu Lys Lys Phe Ser Met | | | | | |
| | 200 | | | | |

<210> 478
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 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 478
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<210> 479
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 479
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<210> 480
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 480
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<210> 481
 <211> 51
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 481
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t 51

<210> 482
 <211> 3819
 <212> DNA
 <213> Homo sapiens

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<211> 693

<212> PRT

<213> Homo sapiens

<400> 483

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| Met | Thr | Pro | Gln | Ser | Leu | Leu | Gln | Thr | Thr | Leu | Phe | Leu | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Phe | Leu | Val | Gln | Gly | Ala | His | Gly | Arg | Gly | His | Arg | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asp | Phe | Arg | Phe | Cys | Ser | Gln | Arg | Asn | Gln | Thr | His | Arg | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | His | Tyr | Lys | Pro | Thr | Pro | Asp | Leu | Arg | Ile | Ser | Ile | Glu | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Glu | Glu | Ala | Leu | Thr | Val | His | Ala | Pro | Phe | Pro | Ala | Ala | His |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Ser | Arg | Ser | Phe | Pro | Asp | Pro | Arg | Gly | Leu | Tyr | His | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr | |
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| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser | |
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| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys | |
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| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr | |

| | | | | | |
|-------------------------------------|-------------------------|--|-----|-----|-----|
| | 365 | | 370 | | 375 |
| Ser Cys Phe Cys Asn His Leu Thr Tyr | Phe Ala Val Leu Met Val | | | | |
| 380 | 385 | | | 390 | |
| Ser Ser Val Glu Val Asp Ala Val His | Lys His Tyr Leu Ser Leu | | | | |
| 395 | 400 | | | 405 | |
| Leu Ser Tyr Val Gly Cys Val Val Ser | Ala Leu Ala Cys Leu Val | | | | |
| 410 | 415 | | | 420 | |
| Thr Ile Ala Ala Tyr Leu Cys Ser Arg | Val Pro Leu Pro Cys Arg | | | | |
| 425 | 430 | | | 435 | |
| Arg Lys Pro Arg Asp Tyr Thr Ile Lys | Val His Met Asn Leu Leu | | | | |
| 440 | 445 | | | 450 | |
| Leu Ala Val Phe Leu Leu Asp Thr Ser | Phe Leu Leu Ser Glu Pro | | | | |
| 455 | 460 | | | 465 | |
| Val Ala Leu Thr Gly Ser Glu Ala Gly | Cys Arg Ala Ser Ala Ile | | | | |
| 470 | 475 | | | 480 | |
| Phe Leu His Phe Ser Leu Leu Thr Cys | Leu Ser Trp Met Gly Leu | | | | |
| 485 | 490 | | | 495 | |
| Glu Gly Tyr Asn Leu Tyr Arg Leu Val | Val Glu Val Phe Gly Thr | | | | |
| 500 | 505 | | | 510 | |
| Tyr Val Pro Gly Tyr Leu Leu Lys Leu | Ser Ala Met Gly Trp Gly | | | | |
| 515 | 520 | | | 525 | |
| Phe Pro Ile Phe Leu Val Thr Leu Val | Ala Leu Val Asp Val Asp | | | | |
| 530 | 535 | | | 540 | |
| Asn Tyr Gly Pro Ile Ile Leu Ala Val | His Arg Thr Pro Glu Gly | | | | |
| 545 | 550 | | | 555 | |
| Val Ile Tyr Pro Ser Met Cys Trp Ile | Arg Asp Ser Leu Val Ser | | | | |
| 560 | 565 | | | 570 | |
| Tyr Ile Thr Asn Leu Gly Leu Phe Ser | Leu Val Phe Leu Phe Asn | | | | |
| 575 | 580 | | | 585 | |
| Met Ala Met Leu Ala Thr Met Val Val | Gln Ile Leu Arg Leu Arg | | | | |
| 590 | 595 | | | 600 | |
| Pro His Thr Gln Lys Trp Ser His Val | Leu Thr Leu Leu Gly Leu | | | | |
| 605 | 610 | | | 615 | |
| Ser Leu Val Leu Gly Leu Pro Trp Ala | Leu Ile Phe Phe Ser Phe | | | | |
| 620 | 625 | | | 630 | |
| Ala Ser Gly Thr Phe Gln Leu Val Val | Leu Tyr Leu Phe Ser Ile | | | | |
| 635 | 640 | | | 645 | |
| Ile Thr Ser Phe Gln Gly Phe Leu Ile | Phe Ile Trp Tyr Trp Ser | | | | |
| 650 | 655 | | | 660 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Gln | Ala | Arg | Gly | Gly | Pro | Ser | Pro | Leu | Lys | Ser | Asn |
| | | | | 665 | | | | | 670 | | | | | 675 |
| | | | | | | | | | | | | | | |
| Ser | Asp | Ser | Ala | Arg | Leu | Pro | Ile | Ser | Ser | Gly | Ser | Thr | Ser | Ser |
| | | | | 680 | | | | | 685 | | | | | 690 |
| | | | | | | | | | | | | | | |
| Ser | Arg | Ile | | | | | | | | | | | | |

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<220>
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<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly |
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| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gln | Phe | Thr | Glu | Ala | Val | Ser | Pro | Ser | Val | Leu | Pro | Pro | Ser | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Pro | Leu | Asp | Leu | Leu | Asn | Asn | Ala | Ile | Thr | Ala | Phe | Ser | Thr |
| | | | | 185 | | | | | 190 | | | | | 195 |

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<211> 1049

<212> PRT

<213> Homo sapiens

<400> 496

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| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Lys | Asp | Ala | Phe | Leu | Asn | Leu | Thr | Lys | Leu | Lys | Val | Leu | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Lys | Asp | Asn | Asn | Val | Thr | Ala | Val | Pro | Thr | Val | Leu | Pro | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Leu | Thr | Glu | Leu | Tyr | Leu | Tyr | Asn | Asn | Met | Ile | Ala | Lys | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Glu | Asp | Asp | Phe | Asn | Asn | Leu | Asn | Gln | Leu | Gln | Ile | Leu | Asp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Ile | Leu | Phe | Ser | Leu | Ser | Ile | Ser | Val | Ser | Leu | Phe | Leu | Met | Val | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Met | Met | Thr | Ala | Ser | His | Leu | Tyr | Phe | Trp | Asp | Val | Trp | Tyr | Ile | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Tyr | His | Phe | Cys | Lys | Ala | Lys | Ile | Lys | Gly | Tyr | Gln | Arg | Leu | Ile | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Ser | Pro | Asp | Cys | Cys | Tyr | Asp | Ala | Phe | Ile | Val | Tyr | Asp | Thr | Lys | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Asp | Pro | Ala | Val | Thr | Glu | Trp | Val | Leu | Ala | Glu | Leu | Val | Ala | Lys | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Leu | Glu | Asp | Pro | Arg | Glu | Lys | His | Phe | Asn | Leu | Cys | Leu | Glu | Glu | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Arg | Asp | Trp | Leu | Pro | Gly | Gln | Pro | Val | Leu | Glu | Asn | Leu | Ser | Gln | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Ser | Ile | Gln | Leu | Ser | Lys | Lys | Thr | Val | Phe | Val | Met | Thr | Asp | Lys | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Ala | Lys | Thr | Glu | Asn | Phe | Lys | Ile | Ala | Phe | Tyr | Leu | Ser | His | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Gln | Arg | Leu | Met | Asp | Glu | Lys | Val | Asp | Val | Ile | Ile | Leu | Ile | Phe | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Leu | Glu | Lys | Pro | Phe | Gln | Lys | Ser | Lys | Phe | Leu | Gln | Leu | Arg | Lys | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Arg | Leu | Cys | Gly | Ser | Ser | Val | Leu | Glu | Trp | Pro | Thr | Asn | Pro | Gln | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Ala | His | Pro | Tyr | Phe | Trp | Gln | Cys | Leu | Lys | Asn | Ala | Leu | Ala | Thr | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | Asn | His | Val | Ala | Tyr | Ser | Gln | Val | Phe | Lys | Glu | Thr | Val | | |
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 <211> 4199
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 <213> Homo sapiens

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<210> 498

<211> 1041

<212> PRT

<213> Homo sapiens

<400> 498

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Phe | Leu | Gln | Ser | Ser | Met | Leu | Thr | Cys | Ile | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Gly | Ser | Cys | Glu | Leu | Cys | Ala | Glu | Glu | Asn | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Tyr | Pro | Cys | Asp | Glu | Lys | Lys | Gln | Asn | Asp | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Glu | Cys | Ser | Asn | Arg | Arg | Leu | Gln | Glu | Val | Pro | Gln | Thr |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Tyr | Ile | Lys | Gly | Ser | Tyr | Pro | Gln | His | Ile | Asn | Ile | Ser | 350 | 355 | 360 |
| Arg | Asn | Phe | Ser | Lys | Leu | Leu | Ser | Leu | Arg | Ala | Leu | His | Leu | Arg | 365 | 370 | 375 |
| Gly | Tyr | Val | Phe | Gln | Glu | Leu | Arg | Glu | Asp | Asp | Phe | Gln | Pro | Leu | 380 | 385 | 390 |
| Met | Gln | Leu | Pro | Asn | Leu | Ser | Thr | Ile | Asn | Leu | Gly | Ile | Asn | Phe | 395 | 400 | 405 |
| Ile | Lys | Gln | Ile | Asp | Phe | Lys | Leu | Phe | Gln | Asn | Phe | Ser | Asn | Leu | 410 | 415 | 420 |
| Glu | Ile | Ile | Tyr | Leu | Ser | Glu | Asn | Arg | Ile | Ser | Pro | Leu | Val | Lys | 425 | 430 | 435 |
| Asp | Thr | Arg | Gln | Ser | Tyr | Ala | Asn | Ser | Ser | Ser | Phe | Gln | Arg | His | 440 | 445 | 450 |
| Ile | Arg | Lys | Arg | Arg | Ser | Thr | Asp | Phe | Glu | Phe | Asp | Pro | His | Ser | 455 | 460 | 465 |
| Asn | Phe | Tyr | His | Phe | Thr | Arg | Pro | Leu | Ile | Lys | Pro | Gln | Cys | Ala | 470 | 475 | 480 |
| Ala | Tyr | Gly | Lys | Ala | Leu | Asp | Leu | Ser | Leu | Asn | Ser | Ile | Phe | Phe | 485 | 490 | 495 |
| Ile | Gly | Pro | Asn | Gln | Phe | Glu | Asn | Leu | Pro | Asp | Ile | Ala | Cys | Leu | 500 | 505 | 510 |
| Asn | Leu | Ser | Ala | Asn | Ser | Asn | Ala | Gln | Val | Leu | Ser | Gly | Thr | Glu | 515 | 520 | 525 |
| Phe | Ser | Ala | Ile | Pro | His | Val | Lys | Tyr | Leu | Asp | Leu | Thr | Asn | Asn | 530 | 535 | 540 |
| Arg | Leu | Asp | Phe | Asp | Asn | Ala | Ser | Ala | Leu | Thr | Glu | Leu | Ser | Asp | 545 | 550 | 555 |
| Leu | Glu | Val | Leu | Asp | Leu | Ser | Tyr | Asn | Ser | His | Tyr | Phe | Arg | Ile | 560 | 565 | 570 |
| Ala | Gly | Val | Thr | His | His | Leu | Glu | Phe | Ile | Gln | Asn | Phe | Thr | Asn | 575 | 580 | 585 |
| Leu | Lys | Val | Leu | Asn | Leu | Ser | His | Asn | Asn | Ile | Tyr | Thr | Leu | Thr | 590 | 595 | 600 |
| Asp | Lys | Tyr | Asn | Leu | Glu | Ser | Lys | Ser | Leu | Val | Glu | Leu | Val | Phe | 605 | 610 | 615 |
| Ser | Gly | Asn | Arg | Leu | Asp | Ile | Leu | Trp | Asn | Asp | Asp | Asp | Asn | Arg | 620 | 625 | 630 |
| Tyr | Ile | Ser | Ile | Phe | Lys | Gly | Leu | Lys | Asn | Leu | Thr | Arg | Leu | Asp | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| 635 | | | | | | | | | 640 | | | | | 645 |
| Leu | Ser | Leu | Asn | Arg 650 | Leu | Lys | His | Ile | Pro 655 | Asn | Glu | Ala | Phe | Leu 660 |
| Asn | Leu | Pro | Ala | Ser 665 | Leu | Thr | Glu | Leu | His 670 | Ile | Asn | Asp | Asn | Met 675 |
| Leu | Lys | Phe | Phe | Asn 680 | Trp | Thr | Leu | Leu | Gln 685 | Gln | Phe | Pro | Arg | Leu 690 |
| Glu | Leu | Leu | Asp | Leu 695 | Arg | Gly | Asn | Lys | Leu 700 | Leu | Phe | Leu | Thr | Asp 705 |
| Ser | Leu | Ser | Asp | Phe 710 | Thr | Ser | Ser | Leu | Arg 715 | Thr | Leu | Leu | Leu | Ser 720 |
| His | Asn | Arg | Ile | Ser 725 | His | Leu | Pro | Ser | Gly 730 | Phe | Leu | Ser | Glu | Val 735 |
| Ser | Ser | Leu | Lys | His 740 | Leu | Asp | Leu | Ser | Ser 745 | Asn | Leu | Leu | Lys | Thr 750 |
| Ile | Asn | Lys | Ser | Ala 755 | Leu | Glu | Thr | Lys | Thr 760 | Thr | Thr | Lys | Leu | Ser 765 |
| Met | Leu | Glu | Leu | His 770 | Gly | Asn | Pro | Phe | Glu 775 | Cys | Thr | Cys | Asp | Ile 780 |
| Gly | Asp | Phe | Arg | Arg 785 | Trp | Met | Asp | Glu | His 790 | Leu | Asn | Val | Lys | Ile 795 |
| Pro | Arg | Leu | Val | Asp 800 | Val | Ile | Cys | Ala | Ser 805 | Pro | Gly | Asp | Gln | Arg 810 |
| Gly | Lys | Ser | Ile | Val 815 | Ser | Leu | Glu | Leu | Thr 820 | Thr | Cys | Val | Ser | Asp 825 |
| Val | Thr | Ala | Val | Ile 830 | Leu | Phe | Phe | Phe | Thr 835 | Phe | Phe | Ile | Thr | Thr 840 |
| Met | Val | Met | Leu | Ala 845 | Ala | Leu | Ala | His | His 850 | Leu | Phe | Tyr | Trp | Asp 855 |
| Val | Trp | Phe | Ile | Tyr 860 | Asn | Val | Cys | Leu | Ala 865 | Lys | Val | Lys | Gly | Tyr 870 |
| Arg | Ser | Leu | Ser | Thr 875 | Ser | Gln | Thr | Phe | Tyr 880 | Asp | Ala | Tyr | Ile | Ser 885 |
| Tyr | Asp | Thr | Lys | Asp 890 | Ala | Ser | Val | Thr | Asp 895 | Trp | Val | Ile | Asn | Glu 900 |
| Leu | Arg | Tyr | His | Leu 905 | Glu | Glu | Ser | Arg | Asp 910 | Lys | Asn | Val | Leu | Leu 915 |
| Cys | Leu | Glu | Glu | Arg 920 | Asp | Trp | Asp | Pro | Gly 925 | Leu | Ala | Ile | Ile | Asp 930 |

Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe Val
935 940 945

Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe
950 955 960

Tyr Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile
965 970 975

Ile Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu
980 985 990

Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro
995 1000 1005

Asp Asn Pro Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn
1010 1015 1020

Val Val Leu Thr Glu Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val
1025 1030 1035

Asp Ser Ile Lys Gln Tyr
1040

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<213> Artificial Sequence

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<210> 500
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<400> 500
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<210> 501
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<210> 504
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<220>
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 <212> DNA
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<210> 506

<211> 273

<212> PRT

<213> Homo sapiens

<400> 506

| | | | | | | | | | | | | | | |
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| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20 | 25 | 30 |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35 | 40 | 45 |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50 | 55 | 60 |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65 | 70 | 75 |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80 | 85 | 90 |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95 | 100 | 105 |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | 155 | 160 | 165 |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | 170 | 175 | 180 |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | 185 | 190 | 195 |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | 200 | 205 | 210 |
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala | 215 | 220 | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu | 230 | 235 | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu | 245 | 250 | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys | 260 | 265 | 270 |
| Lys | Asp | Ser | | | | | | | | | | | | | | | |

<210> 507

<211> 1700

<212> DNA

<213> Homo sapiens

<400> 507

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tggatgagca acccaacggg ggcccgggga ggggaactgg ccccagaggga 300
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<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1 | 5 | 10 | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20 | 25 | 30 | |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35 | 40 | 45 | |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50 | 55 | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65 | 70 | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80 | 85 | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95 | 100 | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 | |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | 155 | 160 | 165 | |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | 170 | 175 | 180 | |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | 185 | 190 | 195 | |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys Asp Ser | | | | | | | | | | | | | | |

<210> 509
 <211> 1538
 <212> DNA
 <213> Homo sapiens

<400> 509
 cccacgcgtc cgaagctggc cctgcacggc tgcaaggag gtcctgtgg 50
 acaggccagg caggtgggccc tcaggaggtg cctccaggcg gccagtgggc 100
 ctgaggcccc agcaagggtc aggggtccatc tccagtccca ggacacagca 150
 gcggccacca tggccacgcc tgggctccag cagcatcagc agccccagg 200
 accggggagg cacaggtggc cccaccacc cggaggagca gtcctgtccc 250
 ctgtccgggg gatgactgat tctcctccgc caggccacc agaggagaag 300
 gccacccgc ctggaggcac aggccatgag gggctctcag gaggtgctgc 350
 tgatgtggct tctggtgttg gcagtgggcg gcacagagca cgcctaccgg 400
 cccggccgta ggggtgtgtg tgtccgggtc cacggggacc ctgtctccga 450
 gtggttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500
 accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550
 agccctgggc tggccctgc caggcctcgc tacgcgtgct gcccggctg 600
 gaagaggacc agcgggcttc ctggggcctg tggagcagca atatgccagc 650
 cgccatgccg gaacggaggg agctgtgtcc agcctggccg ctgccgctgc 700
 cctgcaggat ggcgggggtga cacttgccag tcagatgtgg atgaatgcag 750
 tgctaggagg ggcggctgtc cccagcgtg cgtcaacacc gccggcagtt 800
 actggtgccca gtgttgggag gggcacagcc tgtctgcaga cggtacactc 850
 tgtgtgcccc agggagggcc cccaggggtg gcccacaacc cgacaggagt 900
 ggacagtgca atgaaggaag aagtgcagag gctgcagtcc agggtgacc 950

tgctggagga gaagctgcag ctggtgctgg cccactgca cagcctggcc 1000
 tcgcaggcac tggagcatgg gctcccgac cccggcagcc tcctggtgca 1050
 ctcttccag cagctcggcc gcacgactc cctgagcgag cagatttct 1100
 tcctggagga gcagctgggg tcctgctct gcaagaaaga ctctgactg 1150
 cccagcggcc caggctggac tgagccctc acgcccctt gcagcccca 1200
 tgcccctgcc caacatgctg ggggtccaga agccacctg gggtgactga 1250
 gcggaaggcc aggcagggcc ttctctctt tcctctccc ctctctggg 1300
 aggtcccca gacctggca tgggatgggc tgggatcttc tctgtgaatc 1350
 caccctggc taccaccacc ctggctaccc caacggcatc ccaaggccag 1400
 gtgggcccctc agctgaggga aggtacgagc tccctgctgg agcctgggac 1450
 ccatggcaca ggccaggcag cccggaggct ggggtggggcc tcagtggggg 1500
 ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | |
|---|-----|--|-----|--|-----|
| | 140 | | 145 | | 150 |
| Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu | | | | | |
| | 155 | | 160 | | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly | | | | | |
| | 170 | | 175 | | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala | | | | | |
| | 185 | | 190 | | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu | | | | | |
| | 200 | | 205 | | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala | | | | | |
| | 215 | | 220 | | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu | | | | | |
| | 230 | | 235 | | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu | | | | | |
| | 245 | | 250 | | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys | | | | | |
| | 260 | | 265 | | 270 |
| Lys Asp Ser | | | | | |

<210> 511
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 511
 tggagcagca atatgccagc c 21

 <210> 512
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 512
 ttttcactc ctgtcgggtt gg 22

 <210> 513
 <211> 46
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 513
 ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46

<210> 514
 <211> 2690
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 2039-2065
 <223> unknown base

<400> 514
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 ggagacagcc tcccggcccc ggaggacaa gtcgctgoca cctttggctg 100
 ccgacgtgat tccctgggac ggtccgtttc ctgccgtcag ctgccggccg 150
 agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200
 cccgctgggc cggtttatcg ggaggagatt gtcttccagg gctagcaatt 250
 ggacttttga tgatgtttga ccagcggca ggaatagcag gcaacgtgat 300
 ttcaaagctg ggctcagcct ctgtttcttc tctcgtgtaa tcgcaaaacc 350
 cattttgag caggaattcc aatcatgtct gtgatggtgg tgagaaagaa 400
 ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450
 atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500
 ttctcatcc tggggacatg tacactcttc ttgcctttg agtgccgcta 550
 cctggctgtt cagctgtctc ctgccatccc tgtatttgct gccatgctct 600
 tccttttctc catggctaca ctgttgagga ccagcttcag tgaccctgga 650
 gtgattcctc gggcgctacc agatgaagca gctttcatag aaatggagat 700
 agaagctacc aatggtgcgg tgccccagg ccagcgacca ccgcctcgta 750
 tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800
 acatgcaaga tcttcgggcc tccccgggc tccattgca gcatctgtga 850
 caactgtgtg gagcgcttcg accatcactg cccctgggtg gggaattgtg 900
 ttggaaagag gaactaccgc tacttctacc tcttcactct ttctctctcc 950
 ctctcaciaa tctatgtctt cgcttcaac atcgtctatg tggccctcaa 1000
 atctttgaaa attggcttct tggagacatt gaaagaaact cctggaactg 1050
 ttctagaagt cctcatttgc ttctttacac tctggtccgt cgtgggactg 1100

| | | | | | |
|------------|------------|-------------|------------|------------|------|
| actggatttc | atactttcct | cgtggctctc | aaccagacaa | ccaatgaaga | 1150 |
| catcaaagga | tcatggacag | ggaagaatcg | cgtccagaat | ccctacagcc | 1200 |
| atggcaatat | tgtgaagaac | tgctgtgaag | tgctgtgtgg | ccccttgccc | 1250 |
| cccagtgtgc | tggatcgaag | gggtattttg | ccactggagg | aaagtggaag | 1300 |
| tcgacctccc | agtactcaag | agaccagtag | cagcctcttg | ccacagagcc | 1350 |
| cagcccccac | agaacacctg | aactcaaatg | agatgccgga | ggacagcagc | 1400 |
| actcccgaag | agatgccacc | tccagagccc | ccagagccac | cacaggaggc | 1450 |
| agctgaagct | gagaagtagc | ctatctatgg | aagagacttt | tgtttgtgtt | 1500 |
| taattagggc | tatgagagat | ttcaggtgag | aagttaaacc | tgagacagag | 1550 |
| agcaagtaag | ctgtcccttt | taactgtttt | tctttgggtc | ttagtcaccc | 1600 |
| agttgcacac | tggcattttc | ttgctgcaag | cttttttaaa | tttctgaact | 1650 |
| caaggcagtg | gcagaagatg | tcagtcacct | ctgataactg | gaaaaatggg | 1700 |
| tctcttgggc | cctggcactg | gttctccatg | gcctcagcca | cagggtcocc | 1750 |
| ttggaccccc | tctcttccct | ccagatccca | gccctcctgc | ttggggtcac | 1800 |
| tggtctcatt | ctggggctaa | aagtttttga | gactggctca | aatcctccca | 1850 |
| agctgctgca | cgtgctgagt | ccagaggcag | tcacagagac | ctctggccag | 1900 |
| gggatcctaa | ctgggttctt | gggggtcttca | ggactgaaga | ggagggagag | 1950 |
| tggggtcaga | agattctcct | ggccaccaag | tgccagcatt | gccacaaat | 2000 |
| ccttttagga | atgggacagg | taccttcac | ttgttgtann | nnnnnnnnnn | 2050 |
| nnnnnnnnnn | nnnnnttggt | tttcttttg | actcctgctc | ccattaggag | 2100 |
| caggaatggc | agtaataaaa | gtctgcactt | tggtcatttc | ttttoctcag | 2150 |
| aggaagcccg | agtgtcact | taaacactat | cccctcagac | tccctgtgtg | 2200 |
| aggcctgcag | aggccctgaa | tgacaaaatg | ggaaaccaag | gcacagagag | 2250 |
| gctctcctct | cctctcctct | ccccgatgt | accctcaaaa | aaaaaaaaat | 2300 |
| gctaaccagt | tcttccatta | agcctcggct | gagtgaggga | aagcccagca | 2350 |
| ctgctgccct | ctcgggtaac | tcaccctaag | gcctcggccc | acctctggct | 2400 |
| atggtaacca | cactgggggc | ttcctccaag | ccccgtcttt | ccagcacttc | 2450 |
| caccggcaga | gtcccagagc | cacttcaccc | tgggggtggg | ctgtggcccc | 2500 |
| cagtcagctc | tgctcaggac | ctgctctatt | tcagggaaga | agatttatgt | 2550 |

attatatgtg gctatatattc ctagagcacc tgtgttttcc tcttttctaag 2600
ccagggctcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650
ttttcatcta ttggaaggcg attaaactgt gtctaataca 2690

<210> 515
<211> 364
<212> PRT
<213> Homo sapiens

<400> 515
Met Ser Val Met Val Val Arg Lys Lys Val Thr Arg Lys Trp Glu
1 5 10 15
Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met
20 25 30
Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile
35 40 45
Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu
50 55 60
Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
65 70 75
Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp
80 85 90
Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile
95 100 105
Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
110 115 120
Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile
125 130 135
Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro
140 145 150
Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe
155 160 165
Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn
170 175 180
Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr
185 190 195
Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser
200 205 210
Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr
215 220 225
Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Gly Leu Thr Gly | Phe His Thr Phe Leu | Val Ala Leu Asn Gln Thr | | | |
| | 245 | 250 | | | 255 |
| Thr Asn Glu Asp | Ile Lys Gly Ser Trp | Thr Gly Lys Asn Arg Val | | | |
| | 260 | 265 | | | 270 |
| Gln Asn Pro Tyr | Ser His Gly Asn Ile | Val Lys Asn Cys Cys Glu | | | |
| | 275 | 280 | | | 285 |
| Val Leu Cys Gly | Pro Leu Pro Pro Ser | Val Leu Asp Arg Arg Gly | | | |
| | 290 | 295 | | | 300 |
| Ile Leu Pro Leu | Glu Glu Ser Gly Ser | Arg Pro Pro Ser Thr Gln | | | |
| | 305 | 310 | | | 315 |
| Glu Thr Ser Ser | Ser Leu Leu Pro Gln | Ser Pro Ala Pro Thr Glu | | | |
| | 320 | 325 | | | 330 |
| His Leu Asn Ser | Asn Glu Met Pro Glu | Asp Ser Ser Thr Pro Glu | | | |
| | 335 | 340 | | | 345 |
| Glu Met Pro Pro | Pro Glu Pro Pro Glu | Pro Pro Gln Glu Ala Ala | | | |
| | 350 | 355 | | | 360 |
| Glu Ala Glu Lys | | | | | |

<210> 516
 <211> 255
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 36, 38, 88, 118, 135, 193, 213, 222
 <223> unknown base

<400> 516
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 tgaattaggt attatagga tgggtggggtt gatttttntt cctggaggct 100
 tttggctttg gactctcnc tttctccaca gacncttcg accatcactg 150
 cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200
 tcttcacact ttntctctcc cncctcacia tctatgtctt cgccttcaac 250
 atcgt 255

<210> 517
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

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<223> Synthetic oligonucleotide probe

<400> 517
caacgtgatt tcaaagctgg gctc 24

<210> 518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 518
gcctcgatc aagaatttc 20

<210> 519
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 519
agtggagtc gacctccc 18

<210> 520
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 520
ctcacctgaa atctctcata gcc 24

<210> 521
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 521
cgcaaaaccc attttgggag caggaattcc aatcatgtct gtgatgggtgg 50

<210> 522
<211> 1679
<212> DNA
<213> Homo sapiens

<400> 522
gttgtgtcct tcagcaaac agtggattta aatctccttg cacaagcttg 50
agagcaacac aatctatcag gaaagaaaga aagaaaaaaaa ccgaacctga 100

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caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc 150
aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200
tgtgtctctt ccaaggagtg cccgtgcgca gcgagatgc caccttcccc 250
aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag 300
gtgcactatt gacaaccggg tcaccgggtt ggcttggtta aaccgcagca 350
ccatcctcta tgctgggaat gacaagtggg gcctggatcc tcgctggtc 400
cttctgagca acacccaaac gcagtacagc atcgagatcc agaactgga 450
tgtgtatgac gagggccctt acacctgctc ggtgcagaca gacaaccacc 500
caaagacctc taggggtccac ctcatgtgc aagtatctcc caaattgta 550
gagatttctt cagatatctc cattaatgaa gggaacaata ttagcctcac 600
ctgcatagca actggtagac cagagcctac ggttacttgg agacacatct 650
ctcccaaagc ggttggtctt gtgagtgaag acgaatactt ggaaattcag 700
ggcatcaccg gggagcagtc aggggactac gagtgcagtg cctccaatga 750
cgtggccgcg cccgtggtac ggagagtaaa ggtcaccgtg aactatccac 800
catacatttc agaagccaag ggtacaggtg tccccgtggg aaaaagggg 850
aactgcagt gtgaagcctc agcagtcctc tcagcagaat tccagtggta 900
caaggatgac aaaagactga ttgaaggaaa gaaaggggtg aaagtggaaa 950
acagaccttt cctctcaaaa ctcatcttct tcaatgtctc tgaacatgac 1000
tatgggaact acacttgctt ggcctccaac aagctgggac acaccaatgc 1050
cagcatcatg ctatttggtc caggcgccgt cagcgaggtg agcaacggca 1100
cgtcgaggag ggcaggctgc gtctggctgc tgctcttctt ggtcttgac 1150
ctgcttctca aattttgatg tgagtgccac ttccccaccc gggaaaggct 1200
gccgccacca ccaccaccaa cacaacagca atggcaacac cgacagcaac 1250
caatcagata tatacaaag aaattagaag aaacacagcc tcatgggaca 1300
gaaatttgag ggaggggaac aaagaatact ttggggggaa aagagtttta 1350
aaaaagaaat tgaaaattgc cttgcagata tttaggtaca atggagtttt 1400
cttttcccaa acgggaagaa cacagcacac cgggcttga cccactgcaa 1450
gctgcatcgt gcaacctctt tgggtgccagt gtgggcaagg gctcagcctc 1500
tctgcccaca gagtgcccc acgtggaaca ttctggagct ggccatccca 1550

aattcaatca gtccatagag acgaacagaa tgagaccttc cggcccaagc 1600
 gtggcgctgc gggcactttg gtagactgtg ccaccacggc gtgtgttg 1650
 aaacgtgaaa taaaagagc aaaaaaaaaa 1679

<210> 523
 <211> 344
 <212> PRT
 <213> Homo sapiens

<400> 523
 Met Lys Thr Ile Gln Pro Lys Met His Asn Ser Ile Ser Trp Ala
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 Ile Phe Thr Gly Leu Ala Ala Leu Cys Leu Phe Gln Gly Val Pro
 20 25 30
 Val Arg Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val
 35 40 45
 Thr Val Arg Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp
 50 55 60
 Asn Arg Val Thr Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu
 65 70 75
 Tyr Ala Gly Asn Asp Lys Trp Cys Leu Asp Pro Arg Val Val Leu
 80 85 90
 Leu Ser Asn Thr Gln Thr Gln Tyr Ser Ile Glu Ile Gln Asn Val
 95 100 105
 Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp
 110 115 120
 Asn His Pro Lys Thr Ser Arg Val His Leu Ile Val Gln Val Ser
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 Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro
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 Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile
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| | | |
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| 230 | 235 | 240 |
| Leu Gln Cys Glu Ala Ser Ala Val Pro Ser Ala Glu Phe Gln Trp | | |
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| Tyr Lys Asp Asp Lys Arg Leu Ile Glu Gly Lys Lys Gly Val Lys | | |
| 260 | 265 | 270 |
| Val Glu Asn Arg Pro Phe Leu Ser Lys Leu Ile Phe Phe Asn Val | | |
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| Ser Glu His Asp Tyr Gly Asn Tyr Thr Cys Val Ala Ser Asn Lys | | |
| 290 | 295 | 300 |
| Leu Gly His Thr Asn Ala Ser Ile Met Leu Phe Gly Pro Gly Ala | | |
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| Val Ser Glu Val Ser Asn Gly Thr Ser Arg Arg Ala Gly Cys Val | | |
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| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
| | | | 20 | | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu | 35 | 40 | 45 |
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro | 50 | 55 | 60 |
| Ser | His | Ser | Thr | Cys | Leu | Thr | Glu | Ala | Cys | Ile | Arg | Val | Ala | Gly | 65 | 70 | 75 |
| Lys | Ile | Leu | Glu | Ser | Leu | Asp | Arg | Gly | Val | Ser | Pro | Cys | Glu | Asp | 80 | 85 | 90 |
| Phe | Tyr | Gln | Phe | Ser | Cys | Gly | Gly | Trp | Ile | Arg | Arg | Asn | Pro | Leu | 95 | 100 | 105 |
| Pro | Asp | Gly | Arg | Ser | Arg | Trp | Asn | Thr | Phe | Asn | Ser | Leu | Trp | Asp | 110 | 115 | 120 |
| Gln | Asn | Gln | Ala | Ile | Leu | Lys | His | Leu | Leu | Glu | Asn | Thr | Thr | Phe | 125 | 130 | 135 |
| Asn | Ser | Ser | Ser | Glu | Ala | Glu | Gln | Lys | Thr | Gln | Arg | Phe | Tyr | Leu | 140 | 145 | 150 |
| Ser | Cys | Leu | Gln | Val | Glu | Arg | Ile | Glu | Glu | Leu | Gly | Ala | Gln | Pro | 155 | 160 | 165 |
| Leu | Arg | Asp | Leu | Ile | Glu | Lys | Ile | Gly | Gly | Trp | Asn | Ile | Thr | Gly | 170 | 175 | 180 |
| Pro | Trp | Asp | Gln | Asp | Asn | Phe | Met | Glu | Val | Leu | Lys | Ala | Val | Ala | 185 | 190 | 195 |
| Gly | Thr | Tyr | Arg | Ala | Thr | Pro | Phe | Phe | Thr | Val | Tyr | Ile | Ser | Ala | 200 | 205 | 210 |
| Asp | Ser | Lys | Ser | Ser | Asn | Ser | Asn | Val | Ile | Gln | Val | Asp | Gln | Ser | 215 | 220 | 225 |
| Gly | Leu | Phe | Leu | Pro | Ser | Arg | Asp | Tyr | Tyr | Leu | Asn | Arg | Thr | Ala | 230 | 235 | 240 |
| Asn | Glu | Lys | Val | Leu | Thr | Ala | Tyr | Leu | Asp | Tyr | Met | Glu | Glu | Leu | 245 | 250 | 255 |
| Gly | Met | Leu | Leu | Gly | Gly | Arg | Pro | Thr | Ser | Thr | Arg | Glu | Gln | Met | 260 | 265 | 270 |
| Gln | Gln | Val | Leu | Glu | Leu | Glu | Ile | Gln | Leu | Ala | Asn | Ile | Thr | Val | 275 | 280 | 285 |
| Pro | Gln | Asp | Gln | Arg | Arg | Asp | Glu | Glu | Lys | Ile | Tyr | His | Lys | Met | 290 | 295 | 300 |
| Ser | Ile | Ser | Glu | Leu | Gln | Ala | Leu | Ala | Pro | Ser | Met | Asp | Trp | Leu | 305 | 310 | 315 |
| Glu | Phe | Leu | Ser | Phe | Leu | Leu | Ser | Pro | Leu | Glu | Leu | Ser | Asp | Ser | | | |

| | | | | | |
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| | 320 | | 325 | | 330 |
| Glu Pro Val Val | Val Tyr Gly Met Asp | Tyr Leu Gln Gln Val | Ser | | |
| | 335 | 340 | 345 | | |
| Glu Leu Ile Asn | Arg Thr Glu Pro Ser | Ile Leu Asn Asn Tyr | Leu | | |
| | 350 | 355 | 360 | | |
| Ile Trp Asn Leu | Val Gln Lys Thr Thr | Ser Ser Leu Asp Arg | Arg | | |
| | 365 | 370 | 375 | | |
| Phe Glu Ser Ala | Gln Glu Lys Leu Leu | Glu Thr Leu Tyr Gly | Thr | | |
| | 380 | 385 | 390 | | |
| Lys Lys Ser Cys | Val Pro Arg Trp Gln | Thr Cys Ile Ser Asn | Thr | | |
| | 395 | 400 | 405 | | |
| Asp Asp Ala Leu | Gly Phe Ala Leu Gly | Ser Leu Phe Val Lys | Ala | | |
| | 410 | 415 | 420 | | |
| Thr Phe Asp Arg | Gln Ser Lys Glu Ile | Ala Glu Gly Met Ile | Ser | | |
| | 425 | 430 | 435 | | |
| Glu Ile Arg Thr | Ala Phe Glu Glu Ala | Leu Gly Gln Leu Val | Trp | | |
| | 440 | 445 | 450 | | |
| Met Asp Glu Lys | Thr Arg Gln Ala Ala | Lys Glu Lys Ala Asp | Ala | | |
| | 455 | 460 | 465 | | |
| Ile Tyr Asp Met | Ile Gly Phe Pro Asp | Phe Ile Leu Glu Pro | Lys | | |
| | 470 | 475 | 480 | | |
| Glu Leu Asp Asp | Val Tyr Asp Gly Tyr | Glu Ile Ser Glu Asp | Ser | | |
| | 485 | 490 | 495 | | |
| Phe Phe Gln Asn | Met Leu Asn Leu Tyr | Asn Phe Ser Ala Lys | Val | | |
| | 500 | 505 | 510 | | |
| Met Ala Asp Gln | Leu Arg Lys Pro Pro | Ser Arg Asp Gln Trp | Ser | | |
| | 515 | 520 | 525 | | |
| Met Thr Pro Gln | Thr Val Asn Ala Tyr | Tyr Leu Pro Thr Lys | Asn | | |
| | 530 | 535 | 540 | | |
| Glu Ile Val Phe | Pro Ala Gly Ile Leu | Gln Ala Pro Phe Tyr | Ala | | |
| | 545 | 550 | 555 | | |
| Arg Asn His Pro | Lys Ala Leu Asn Phe | Gly Gly Ile Gly Val | Val | | |
| | 560 | 565 | 570 | | |
| Met Gly His Glu | Leu Thr His Ala Phe | Asp Asp Gln Gly Arg | Glu | | |
| | 575 | 580 | 585 | | |
| Tyr Asp Lys Glu | Gly Asn Leu Arg Pro | Trp Trp Gln Asn Glu | Ser | | |
| | 590 | 595 | 600 | | |
| Leu Ala Ala Phe | Arg Asn His Thr Ala | Cys Met Glu Glu Gln | Tyr | | |
| | 605 | 610 | 615 | | |

Asn Gln Tyr Gln Val Asn Gly Glu Arg Leu Asn Gly Arg Gln Thr
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Leu Gly Glu Asn Ile Thr Asp Asn Gly Gly Leu Lys Ala Ala Tyr
635 640 645

Asn Ala Tyr Lys Ala Trp Leu Arg Lys His Gly Glu Glu Gln Gln
650 655 660

Leu Pro Ala Val Gly Leu Thr Asn His Gln Leu Phe Phe Val Gly
665 670 675

Phe Ala Gln Val Trp Cys Ser Val Arg Thr Pro Glu Ser Ser His
680 685 690

Glu Gly Leu Val Thr Asp Pro His Ser Pro Ala Arg Phe Arg Val
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Leu Gly Thr Leu Ser Asn Ser Arg Asp Phe Leu Arg His Phe Gly
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Trp

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| | 245 | | 250 | | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly | Gln | Gln | Gly | Ile Ile |
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| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys | Val | Ala | Ala | Asn Lys |
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| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu | Asn | Pro | Pro | Ser Thr |
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| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe | Thr | Ser | Ile | Phe Tyr |
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<400> 614

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Asn | Lys | Lys | Ile | Leu | Lys | Glu | Asp | Glu | Leu | Leu | Ser | Glu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Gln | Ala | Ala | Phe | His | Gln | Ile | Ala | Met | Glu | Pro | Phe | Glu |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35 | 40 | 45 |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50 | 55 | 60 |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65 | 70 | 75 |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80 | 85 | 90 |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95 | 100 | 105 |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | 185 | 190 | 195 |
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln | 200 | 205 | 210 |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln | 215 | 220 | 225 |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys | 230 | 235 | 240 |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro | 245 | 250 | 255 |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met | 260 | 265 | 270 |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro | 275 | 280 | 285 |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln | 290 | 295 | 300 |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val | 305 | 310 | 315 |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro | | | |

| | | | | | |
|-----------------|-------------------------|-------------------------|-----|--|-----|
| | 320 | | 325 | | 330 |
| Gly Arg Ala Gly | Leu Pro Gly Ser Pro | Gly Ser Pro Gly Ala Thr | | | |
| | 335 | 340 | | | 345 |
| Gly Leu Lys Gly | Ser Lys Gly Asp Thr | Gly Leu Gln Gly Gln Gln | | | |
| | 350 | 355 | | | 360 |
| Gly Arg Lys Gly | Glu Ser Gly Val Pro | Gly Pro Ala Gly Val Lys | | | |
| | 365 | 370 | | | 375 |
| Gly Glu Gln Gly | Ser Pro Gly Leu Ala | Gly Pro Lys Gly Ala Pro | | | |
| | 380 | 385 | | | 390 |
| Gly Gln Ala Gly | Gln Lys Gly Asp Gln | Gly Val Lys Gly Ser Ser | | | |
| | 395 | 400 | | | 405 |
| Gly Glu Gln Gly | Val Lys Gly Glu Lys | Gly Glu Arg Gly Glu Asn | | | |
| | 410 | 415 | | | 420 |
| Ser Val Ser Val | Arg Ile Val Gly Ser | Ser Asn Arg Gly Arg Ala | | | |
| | 425 | 430 | | | 435 |
| Glu Val Tyr Tyr | Ser Gly Thr Trp Gly | Thr Ile Cys Asp Asp Glu | | | |
| | 440 | 445 | | | 450 |
| Trp Gln Asn Ser | Asp Ala Ile Val Phe | Cys Arg Met Leu Gly Tyr | | | |
| | 455 | 460 | | | 465 |
| Ser Lys Gly Arg | Ala Leu Tyr Lys Val | Gly Ala Gly Thr Gly Gln | | | |
| | 470 | 475 | | | 480 |
| Ile Trp Leu Asp | Asn Val Gln Cys Arg | Gly Thr Glu Ser Thr Leu | | | |
| | 485 | 490 | | | 495 |
| Trp Ser Cys Thr | Lys Asn Ser Trp Gly | His His Asp Cys Ser His | | | |
| | 500 | 505 | | | 510 |
| Glu Glu Asp Ala | Gly Val Glu Cys Ser Val | | | | |
| | 515 | 520 | | | |

<210> 615
 <211> 647
 <212> DNA
 <213> Homo Sapien

<400> 615
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 agcacctcct ctcttctcct ttgcccacaa ctcacccagt gagtgtgagc 100
 atttaagaag catcctctgc caagacacaa aggaaagaag aaaaagggcc 150
 aaaagccaaa atgaaactga tgggtacttgt tttcaccatt gggctaactt 200
 tgctgctagg agttcaagcc atgcctgcaa atcgctctc ttgctacaga 250
 aagatactaa aagatcacaa ctgtcacac cttccggaag gagtagctga 300

cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350
 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgcca 400
 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550
 tagagcatag attctataaa ttcttacttg tctaagacaa gtaaactctgt 600
 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaa 647

<210> 616
 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
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 1 5 10 15
 Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
 20 25 30
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
 35 40 45
 Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp
 50 55 60
 Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
 65 70 75
 Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser
 80 85 90
 Phe Val Ile Pro Cys Asn Asn Gln
 95

<210> 617
 <211> 2558
 <212> DNA
 <213> Homo Sapien

<400> 617
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 accccgccgt ggtggttggg gggcgcgcag tagagcagca gcacaggcgc 150
 ggggtcccggg aggcgcgctc tgctcgcgcc gagatgtgga atctccttca 200
 cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgcg 250
 ctggggcgct ggtgctggcg ggtggcttct ttctcctcgg cttcctcttc 300

ggggtggttta taaaatcctc caatgaagct actaacatta ctccaaagca 350
 taatatgaaa gcatttttgg atgaattgaa agctgagaac atcaagaagt 400
 tcttacataa ttttacacag ataccacatt tagcaggaac agaacaaaac 450
 tttcagcttg caaagcaaatt tcaatcccag tggaaagaat ttggcctgga 500
 ttctgttgag ctagctcatt atgatgtcct gttgtcctac ccaaataaga 550
 ctcatcccaa ctacatctca ataattaatg aagatggaaa tgagattttc 600
 aacacatcat tatttgaacc acctcctcca ggatatgaaa atgtttcgga 650
 tattgtacca cctttcagtg ctttctctcc tcaaggaatg ccagagggcg 700
 atctagtgtg tgttaactat gcacgaactg aagacttctt taaattggaa 750
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 gaaagttttc agaggaaata aggttaaaaa tgcccagctg gcaggggcca 850
 aaggagtcac tctctactcc gacctgctg actactttgc tcctggggtg 900
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 ccaagtattc ctgttcatcc aattggatac tatgatgcac agaagctcct 1100
 agaaaaaatg ggtggctcag caccaccaga tagcagctgg agaggaagtc 1150
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 caatgtgata ggtactctca gaggagcagt ggaaccagac agatatgtca 1300
 ttctgggagg tcaccgggac tcatgggtgt ttggtggtat tgaccctcag 1350
 agtggagcag ctgttggtca tgaaattgtg aggagctttg gaacactgaa 1400
 aaaggaaggg tggagacctg gaagaacaat tttgtttgca agctgggatg 1450
 cagaagaatt tgggtcttctt ggttctactg agtgggcaga ggagaattca 1500
 agactccttc aagagcgtgg cgtggcttat attaatgctg actcatctat 1550
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tgttcttcca acgacttgga attgcttcag gcagagcaag gtataactaaa 1800
 aattgggaaa caaacaatt cagcggctat ccaactgtatc acagtgtcta 1850
 tgaacatat gagttggtgg aaaagtttta tgatccaatg tttaaatatac 1900
 acctcactgt ggcccagggt cgaggaggga tgggtgttga gctagccaat 1950
 tccatagtgc tcccttttga ttgtcgagat tatgctgtag ttttaagaaa 2000
 gtatgctgac aaaatctaca gtatttctat gaaacatcca caggaaatga 2050
 agacatacag tgtatcattt gattcacttt tttctgcagt aaagaatttt 2100
 acagaaattg cttccaagtt cagtgaaga ctccaggact ttgacaaaag 2150
 caaccaata gtattaagaa tgatgaatga tcaactcatg tttctggaaa 2200
 gagcatttat tgatccatta ggggtaccag acaggccttt ttataggcat 2250
 gtcatttatg ctccaagcag ccacaacaag tatgcagggg agtcattccc 2300
 aggaatttat gatgctctgt ttgatattga aagcaaagtg gacccttcca 2350
 aggctgggg agaagtgaag agacagattt atgttcagc cttcacagtg 2400
 caggcagctg cagagacttt gaggtaagta gcctaagagg attttttaga 2450
 gaatccgtat tgaatttgtg tggatgtca ctcagaaaga atcgtaatgg 2500
 gtatattgat aaattttaaa attggtatat ttgaaataaa gttgaatatt 2550
 atatataa 2558

<210> 618
 <211> 750
 <212> PRT
 <213> Homo Sapien

<400> 618
 Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala
 1 5 10 15
 Arg Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly
 20 25 30
 Gly Phe Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser
 35 40 45
 Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala
 50 55 60
 Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
 65 70 75
 Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe
 80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Glu | Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Tyr | Glu | Asn | Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Gln | Gly | Met | Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Thr | Glu | Asp | Phe | Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Cys | Ser | Gly | Lys | Ile | Val | Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Asn | Lys | Val | Lys | Asn | Ala | Gln | Leu | Ala | Gly | Ala | Lys | Gly | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | Tyr | Phe | Ala | Pro | Gly | Val | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | Gly | Gly | Gly | Val | Gln | Arg | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | Asp | Pro | Leu | Thr | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | Gly | Ile | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | Gly | Tyr | Tyr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | Pro | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | Gly | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Pro | Gly | Phe | Thr | Gly | Asn | Phe | Ser | Thr | Gln | Lys | Val | Lys | Met | His | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ile | His | Ser | Thr | Asn | Glu | Val | Thr | Arg | Ile | Tyr | Asn | Val | Ile | Gly | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Leu | Arg | Gly | Ala | Val | Glu | Pro | Asp | Arg | Tyr | Val | Ile | Leu | Gly | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | His | Arg | Asp | Ser | Trp | Val | Phe | Gly | Gly | Ile | Asp | Pro | Gln | Ser | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|-----|-----|
| | 380 | | 385 | | 390 |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr | Leu | | |
| | 395 | 400 | | 405 | |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala | Ser | | |
| | 410 | 415 | | 420 | |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp | Ala | | |
| | 425 | 430 | | 435 | |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr | Ile | | |
| | 440 | 445 | | 450 | |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val | Asp | | |
| | 455 | 460 | | 465 | |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys | Glu | | |
| | 470 | 475 | | 480 | |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr | Glu | | |
| | 485 | 490 | | 495 | |
| Ser Trp Thr Lys | Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met | Pro | | |
| | 500 | 505 | | 510 | |
| Arg Ile Ser Lys | Leu Gly Ser Gly Asn | Asp Phe Glu Val Phe | Phe | | |
| | 515 | 520 | | 525 | |
| Gln Arg Leu Gly | Ile Ala Ser Gly Arg | Ala Arg Tyr Thr Lys | Asn | | |
| | 530 | 535 | | 540 | |
| Trp Glu Thr Asn | Lys Phe Ser Gly Tyr | Pro Leu Tyr His Ser | Val | | |
| | 545 | 550 | | 555 | |
| Tyr Glu Thr Tyr | Glu Leu Val Glu Lys | Phe Tyr Asp Pro Met | Phe | | |
| | 560 | 565 | | 570 | |
| Lys Tyr His Leu | Thr Val Ala Gln Val | Arg Gly Gly Met Val | Phe | | |
| | 575 | 580 | | 585 | |
| Glu Leu Ala Asn | Ser Ile Val Leu Pro | Phe Asp Cys Arg Asp | Tyr | | |
| | 590 | 595 | | 600 | |
| Ala Val Val Leu | Arg Lys Tyr Ala Asp | Lys Ile Tyr Ser Ile | Ser | | |
| | 605 | 610 | | 615 | |
| Met Lys His Pro | Gln Glu Met Lys Thr | Tyr Ser Val Ser Phe | Asp | | |
| | 620 | 625 | | 630 | |
| Ser Leu Phe Ser | Ala Val Lys Asn Phe | Thr Glu Ile Ala Ser | Lys | | |
| | 635 | 640 | | 645 | |
| Phe Ser Glu Arg | Leu Gln Asp Phe Asp | Lys Ser Asn Pro Ile | Val | | |
| | 650 | 655 | | 660 | |
| Leu Arg Met Met | Asn Asp Gln Leu Met | Phe Leu Glu Arg Ala | Phe | | |
| | 665 | 670 | | 675 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Pro | Leu | Gly | Leu | Pro | Asp | Arg | Pro | Phe | Tyr | Arg | His | Val |
| | | | | 680 | | | | | 685 | | | | | 690 |
| | | | | | | | | | | | | | | |
| Ile | Tyr | Ala | Pro | Ser | Ser | His | Asn | Lys | Tyr | Ala | Gly | Glu | Ser | Phe |
| | | | | 695 | | | | | 700 | | | | | 705 |
| | | | | | | | | | | | | | | |
| Pro | Gly | Ile | Tyr | Asp | Ala | Leu | Phe | Asp | Ile | Glu | Ser | Lys | Val | Asp |
| | | | | 710 | | | | | 715 | | | | | 720 |
| | | | | | | | | | | | | | | |
| Pro | Ser | Lys | Ala | Trp | Gly | Glu | Val | Lys | Arg | Gln | Ile | Tyr | Val | Ala |
| | | | | 725 | | | | | 730 | | | | | 735 |
| | | | | | | | | | | | | | | |
| Ala | Phe | Thr | Val | Gln | Ala | Ala | Ala | Glu | Thr | Leu | Ser | Glu | Val | Ala |
| | | | | 740 | | | | | 745 | | | | | 750 |

<210> 619

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 619

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<210> 620

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 620

gaacatcagc gctcccggta attcc 25

<210> 621

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 621

ccagcctttg aatggtacaa aggagagaag aagctcttca atggcc 46

<210> 622

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 622

ccaaactcac ccagtgagtg tgagc 25

